62
R
58115
.29832

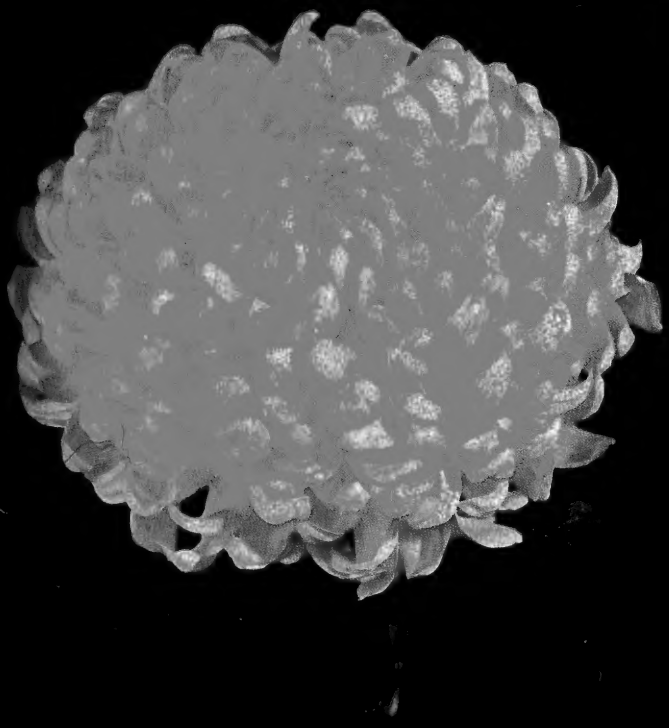
1958

BALL

MUMS-PLANTS

WEST CHICAGO, ILLINOIS • Phone 299

LIBRARY
RECEIVED
★ FEB 4 1958
U. S. Department of Agriculture



Chrysanthemums	Page	Plants	Page
Variety List	8	Carnations	98
Year Round Culture	51	Roses	113
Pot Mums	82	Foliage Plants	119
Variety Index	96	Containers & Supplies	131

Above right, FRED SHOESMITH
Lower left, YEL. SHOESMITH

to help YOU *grow better Mums!*

WE thought you would be interested to take a 3 minute look into the things going on "Mum-wise" at West Chicago these days. All these projects have a common goal: To make **your** Mum crops better, more profitable.

1. Importing New Varieties

We have imported over 300 Mum varieties from England, Europe, and the Orient the past three years. Each has been carefully test flowered year round at our West Chicago range. Some of them (mainly standards and pot varieties) show real promise for the American trade. Some appear in this '58 Ball Mum Guide, others will appear next year. Our descriptions (of the Ball imports) give you the usually candid good and bad points based on several seasons of year round flowering experience with them. We believe these imports will soon become an important part of the American Mum crop.

Test flowering of imports at West Chicago

Many foreign varieties for one reason or another don't fit into American growing—but some show real promise.

It has been a very interesting project! Volumes could be written about plants lost at Hoboken (the quarantine) and other problems—all easily offset by the excitement of seeing these many foreign "visitors" in flower for the first time on U. S. soil.

A typical flowering of imported Mum varieties at West Chicago. Many—actually the great majority—are not suited to American Mum growing, especially year round flowering. It's the occasional one that shows great promise that makes the project fascinating—and worthwhile.

2. Year Round Mum Testing

A continuous project here at West Chicago. All important new varieties (pot plant, cut flowers, disbud) are compared with "old stand-bys" during seasons for which they are recommended. Our year round flowering schedules (page 65) and pot tables (page 85) may **look** the same year after year. Actually much careful study goes into annual revision of these variety recommendations—all based on our own trials.

New growing techniques are another subject of constant study at West Chicago. Interrupted light? 6 days a week shade? Automatic watering, feeding? Best varieties of spring garden Mums? You will find our conclusion on these and many other problems in various Ball Publications.

Here's a good example (left) of why we continuously compare the old and new in Mum varieties. Above left is old standby Bonnaffon and right, the new Yellow Delaware. Conclusion: Yellow Delaware almost any week of the year is a showier, more adaptable and easier to grow variety. In the photo (left) Vic Ball, (right) Lawrence Rerko, Ball Mum Planning Service.

3. Ball Mum Planning Service

A group of qualified and experienced men on our staff here at West Chicago who devote their entire efforts to this service. This "MPS" staff runs our year round variety testing program—including year round standards, pomps, disbuds and pot Mums. This, together with constant contact with commercial Mum growers in all sections of the U. S., qualifies them well on proper selection of varieties, schedules, and other problems in year round Mum flowering.

What MPS Can Do For You:

1. Help you select the very best varieties (new or standard) for each flowering period—for your own climate and market.
2. Recommend correct spacing, schedules, shading dates, lighting dates, etc.
3. Put all of this into a **written** program. When this program has your final O.K., we provide copies for your grower and if appropriate, to your wholesale outlet. Everyone concerned works by a written plan.
4. **Saves your time.** You simply give us a general directive as to what you want to flower and when. We work out all the details subject to your final O.K.

Interested?

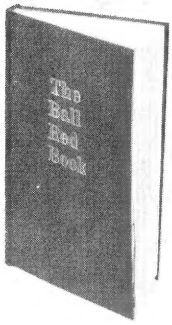
Write us—or see your Ball representative. You'll find him a good Mum man.

The Maton Bros. Art (left), and Walt, who operate the Webb Greenhouses at Pana, Ill. Year round Standards are the main crop on this large range—actually the boys have all of their 80,000 sq. ft. in Standards, and they grow them well! The entire year round Mum area is equipped with pad and fan cooling to insure top quality through the hot central Illinois summer. Says Art of our Mum Planning Service (which plans the Maton Mums): "It relieves us of a lot of detail work, and we're sure of being in cut all the time with the right varieties and colors. We like it."

PUBLICATIONS

To keep you posted on the above projects—plus grower service activities in other fields such as bedding plants, Snaps, bulb crops etc.:

Grower Talks. Monthly. Our principal way of keeping our customers posted on what's new in varieties, growing methods, trade news, etc. Includes a monthly "What To Sow This Month". Recent topics: Plastic Greenhouses (June '57), Soil Sterilizing (May 1957), Greenhouse Cooling (May 1957), New Developments in Mums (April 1957), News in containers for bedding plants (January 1957), and many others. Offered at cost: 1 year **$1.25** or 3 years **$3.50.**



Ball Red Book (Ninth Edition). A 287 page illustrated text on how to grow most of the important U. S. commercial flower crops. Includes chapters on various other greenhouse management problems—soil sterilizing, cost accounting, seed germination. **$2.00** per copy.

Mum Publications. This annual Ball Mum Guide is our principal publication on Mum varieties, culture, trends.

We also offer, at no charge to Ball Mum customers, our **Mum Planning Service Bulletin**—mimeographed notes mainly on new developments on year round cut or pot Mum flowering. No definite publication schedule—published as the need arises.

From the left, George, Bob, Vic, and Carl Ball

Yours for better mums!

The Ball Brothers

5 WAYS TO MAKE MONEY WITH MUMS!

1 YEAR ROUND CUT MUMS

Gradually — but surely — year round mums have become a major cut flower crop. As late as 1950, continuous production of cut mums under glass was viewed as rather an experiment. Today it is an important crop on literally hundreds of ranges across the entire country. What's more, this trend toward year round flowering is still picking up steam. A considerable number of new continuous flowering programs have been launched during the past year.

Why?

The key factor in this unusual switch of crops is that the growers, in most cases, were convinced that year round mums could earn them more dollars per foot than the crops they had been growing. The fact that virtually no programs have been discontinued confirms this conclusion.

Until recently, most of this production went into the larger wholesale cut flower ranges. Most of it still is there—but there has been an unmistakable trend toward year round cut mum production in the medium to larger sized retail ranges. Year round mums "fit" admirably into the flower needs of these retail growing ranges.

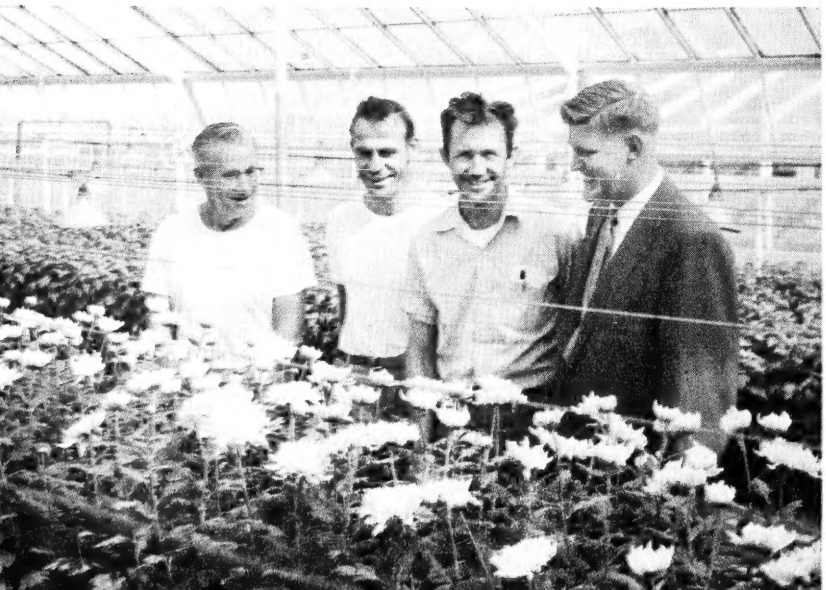
Other Reasons

There are other considerations that have encouraged growers to move toward mums. As we see them:

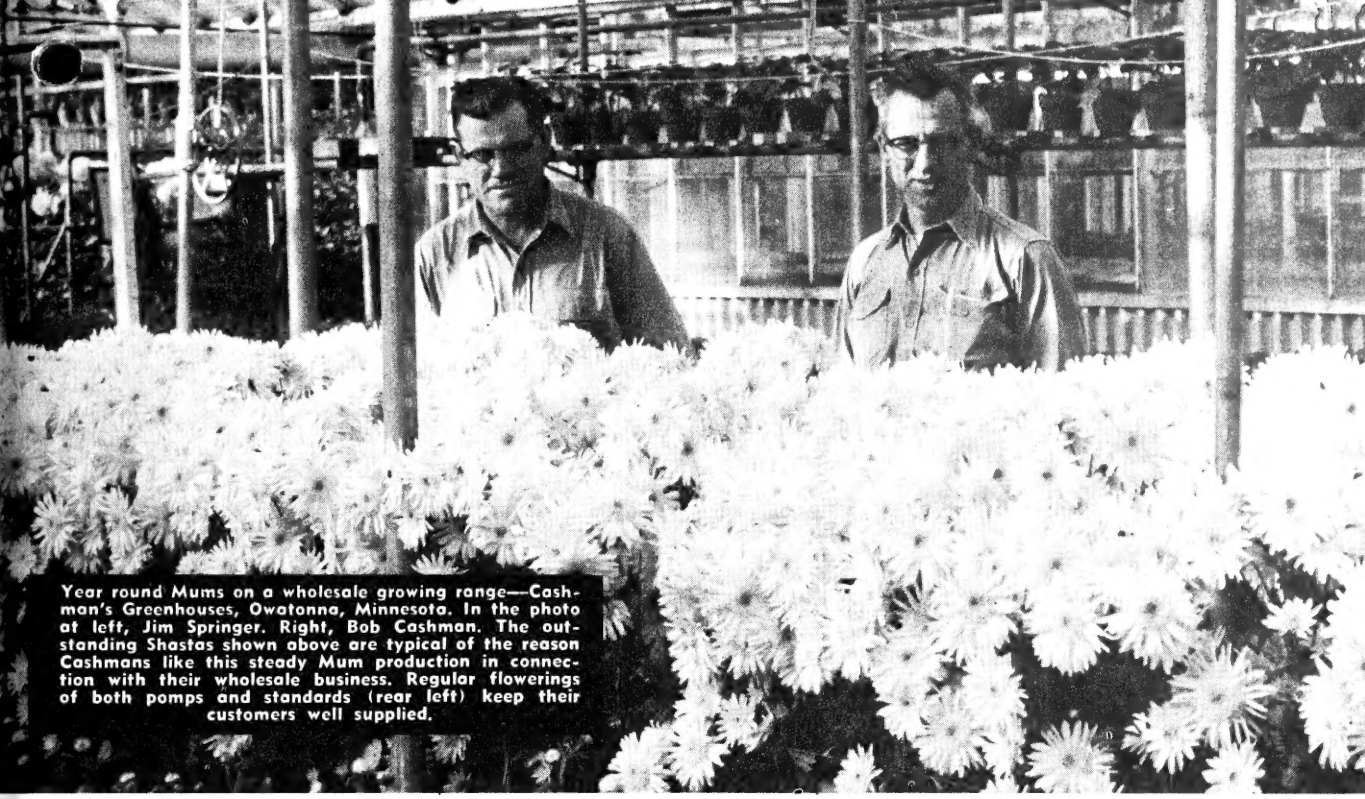
1. The year round mum grower is on the market 52 weeks a year with good quality flowers. All the other major cut flower crops more or less go off the market during the summer months. Mums, although not at peak quality during hot weather, are of quite acceptable size and color, and bring in a steady return all summer. Actually, in our experience, June and July are among our best months from point of sales.

2. Control. The year round grower has complete control over the amount and nature of his production each week of the year. Dark winter weather cuts production way down on other crops, warm spring days speed it up. The mum grower can plan for just as many or as few flowers each week of the year as he feels will sell. Furthermore, he can adjust proportions of colors and types from week to week. He can produce **all** red for Christmas! He can flower all standards in April, all pomps in June—or any proportions. Growers working on programs prepared by our Ball Mum Planning Service need only to let us know what they want to flower and when—we do the adjusting of schedules, variety selection, etc.

3. Steady work, steady costs, steady returns. As some growers put it, the crop is "easy to live with." There is no big rush of work tearing out and re-



A look in on the year round Mum program at Reading Floral, Reading, Pa.—and some of the men behind it. From the left, Charles Hess, Production Manager; Dick Koch and Ray Shisler of the greenhouse staff; and Charles Crownover, Geo. J. Ball, Inc. The two 80 x 600 ft. houses that make up this range are among the largest in the U. S. Interesting tip-off on trends in the trade: Reading, formerly entirely Roses, has partitioned off the large houses and diversified into year round Mums, Carnations, Snapdragons, plus a substantial planting of Roses, of course. All wholesale.



Year round Mums on a wholesale growing range—Cashman's Greenhouses, Owatonna, Minnesota. In the photo at left, Jim Springer. Right, Bob Cashman. The outstanding Shastas shown above are typical of the reason Cashmans like this steady Mum production in connection with their wholesale business. Regular flowerings of both pomps and standards (rear left) keep their customers well supplied.

planting the whole place at one time. There's no great rush of harvesting at once. There's no big expense at any one time. And there's money coming in **every** week.

Your benches are always full—except for the week or two between crops.

4. Less labor. Growers generally report that continuous production of mums requires less labor per acre under glass than the other major crops. The crop lends itself to automatic watering, feeding, direct benching, wire mesh supports—and other labor saving devices. Really there is nothing about the crop that **is** a big job.

What it Takes

To succeed with year round mum production:

1. Enough heat to maintain a 60° minimum all except for two or three of the most severe nights of the winter. Houses must be heated evenly—no cold or warm ends, etc. Thermostatic control of temperature is highly desirable. Temperatures **must** be controlled accurately.

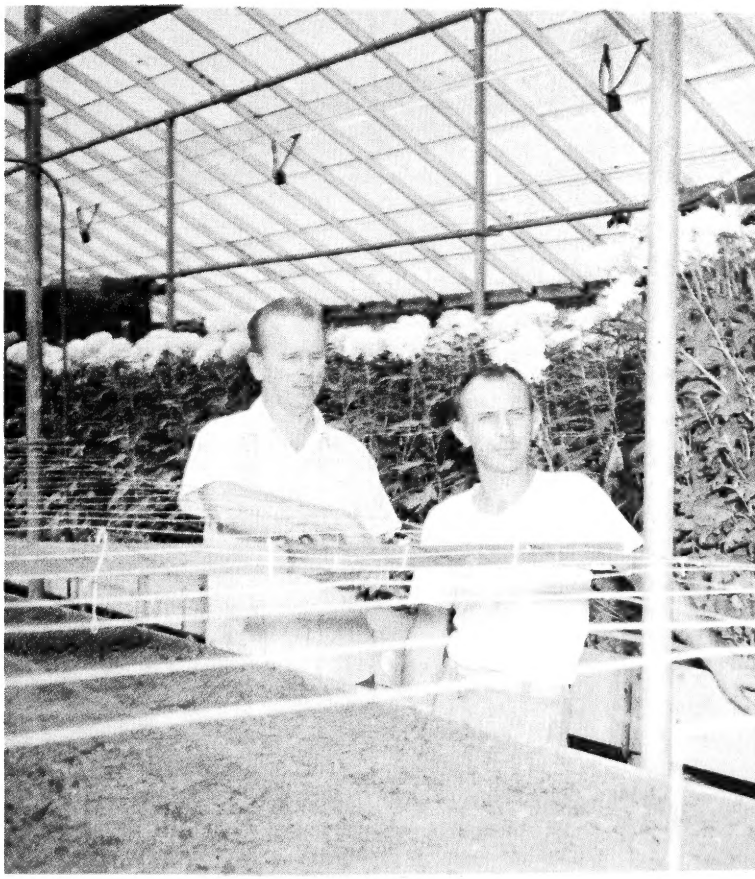
2. Adequate ventilation. Especially as far south as St. Louis, Mo.; Columbus, Ohio and Philadelphia, Penn., summer production is not recommended unless both top and side vents are available—or unless cooling is installed.

3. Growing "know how." Certainly a knowledge and experience with soils, insect-disease problems, labor management, and marketing are necessary to make it pay.

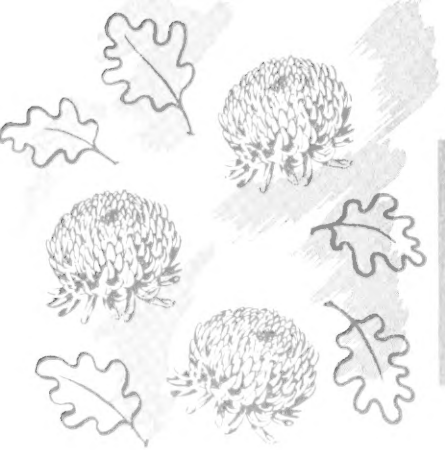
4. Capital. Year round mums can **earn** money, but it takes money to get started. For example, a grower starting a year round planting of 4,000 sq. ft. of bench area, will have close to $2,200 invested in cloth, light and cuttings before the first returns will come in. This assumes that no black cloth or lighting facilities are available.

Ball Mum Planning Service

Our "MPS" stands ready to serve growers interested in year round cut flower production. Full details on page 1.



Mums at Morgan's Flowers, Elgin, Illinois. A retail growing range, Morgans grow a general range of cut flower and potted plant crops—including year round Mums as shown above. This trend toward year round Mum production on retail ranges is increasing each year. It is found more commonly on the medium to larger size retail ranges, although some of the smaller places are flowering year round, especially pot Mums. Shown above with the Mums are two of the growers of Morgan's Flowers, left, Alvin Beyer, and right, Otto Christiansen.



2 FALL MUMS FOR THE RETAIL GROWER

"Fall" mums—a few benches or a house—on most of the 15 or 20 thousand retail ranges across the U.S.—are still the backbone of the American Mum crop. Because they provide "greenhouse fresh" flowers, because they are handy in case of rush work, and because they are easy to grow, we believe they will continue to be popular among the retail growers.

For this type of mum grower, here are a few suggestions on how to make the crop pay better:

1. Plan the crop

—in advance. Most important, by selection of suitable varieties, good flowers can be produced from mid-October through New Year's. **Most varieties** on the list flower during November. That doesn't mean that most of your production should occur then.

2. Include some of the unusual things

There are many distinctive and unusual varieties seldom seen on wholesale markets. Reason: they often are poor shippers. Here are a few suggestions of these out of the ordinary types: Olnura, Illini Starflower, Luyona, Illini Snowdrift, Samovar, Rubaiyat, and Valencia varieties, the Pockett varieties, Poinsettia, Venona, Illini Petite, Radiance, Tiptop, Nightingale, Valentine.

3. Include pomps, standards—and some disbuds!

With very little extra trouble, a retailer's fall mum crop can include all three of these flower types. This wide variety of flower types available throughout the fall season will surely be welcomed by your retail department.

Don't pass those disbuds by. They can be produced roughly twice as many per square foot as regular standards, are very showy and colorful—will often serve the same purpose as a standard at half the cost. The major part of the European mum crop is disbuds.

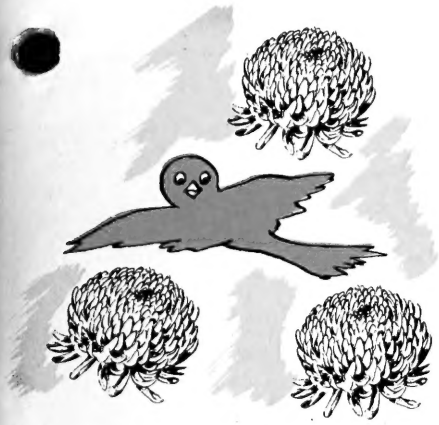
4. Include normal season pot mums

Simple and definite schedules and recommended varieties will be found on page 95. If followed accurately, compact good quality plants will result. No shade, no lights. Flowering period for best quality: mid-October through Thanksgiving.

Pot mums **have** become a major year round pot plant—but they are still a favorite in the fall!

Three inch spring garden Mums at Molesta's, Grand Rapids, Michigan. John Molesta shown above. The Molestas make something of a specialty of these 3 inch spring Mums. They are potted one cutting to a 3 inch pot about March 2, 60°, but no shade and no lights for the plant shown above—in flower early May. Details on opposite page. John says they move well in connection with their retail outlet. The Molestas also flower cut mums and pompons year round in connection with their retail trade.

Here's Kermit Swaby, successful retail grower at St. Charles, Ill., shown with his fall (normal) mums. Kermit does shade some, enough to extend his flowering season from mid-September to Christmas. He does grow Lace Spiders, Snowdrift, and other unusual types not often found on the markets—says it helps him give his trade something different. Kermit used to do his own propagating, has gone over entirely to use of specialist cuttings. He found that the propagating job came in spring just when he was the busiest, and tended to be neglected. "I'd never go back," he says.



3 MUMS FOR SPRING BEDDING SALES

Use of Mums—garden or hardies mostly—as a spring bedding plant has more than doubled the past three years! They are fast becoming a major item on the spring plant list. Main reasons: they are easy to grow, and they are at their best in autumn when most other garden subjects are "over the hill." Here are the ways they are used:

Garden Mums in flower in 3's for spring

Here's an unusual, showy, yet easy to grow item for your spring trade!

A single cutting (garden variety) is potted to a three inch pot March 2, pinched March 9, and grown at 60° nights. No shade, no lights—and they'll be nicely **in flower** by early May! They make colorful, highly salable plants—especially in the bright new aluminum pots. They are a low cost item (some growers offer them for 39c cash and carry). Best of all, after your customer has enjoyed the flowers on them for a couple of weeks, the plant can be cut back, planted out to his garden—and it will flower again in the fall. Some growers attach little tags to them, pointing out their use for fall flowering and giving brief instructions (cut back half way down, plant out, water, feed, pinch till August 1, etc.). Quite a few of these Garden Mums in spring are flowered in larger pot sizes too—4-5 and even some in 6 inch.

The schedule described above will flower most varieties in early May (many for Mother's Day).

See page 42 for actual flowering date on garden varieties grown no shade no lights here last spring. Garden varieties may be potted as early as mid-February and as late as mid-March—no shade, no lights. They flower 8 to 10 weeks after potting.

Spring garden mums can be brought in for a certain date (Easter, Mother's Day, Decoration Day), by use of lights, then black cloth shade. Schedules to flower the late September-early October garden kinds follow:

1958

	Plant	Light	Shade	Pinch
Easter (April 6)	Jan. 23	Jan. 23-30	March 15	Feb. 13
Mother's Day (May 11)	Feb. 27	Feb. 27-March 5	March 15	March 20
Decoration Day (May 30)	March 13	March 13-19	March 20	April 3

Varieties

See page 42 for a few of the best varieties for spring pot flowering according to our 1957 spring trials. Also April '57 Grower Talks, page 8.

Our suggested list of varieties for this spring flowering of Garden Mums consists of **all those varieties marked "P" (for pots), and which have a normal flowering date of not later than October 10.** The list starts on page 43.

Garden Mums—flatted or potted for spring sales

The most important single use made of Garden Mums for spring sales.

They may be handled several different ways: **As potted plants**—cuttings are potted to 2¼ or better to 3 inch pots in early April, pinched soft in 2-3 weeks, are ready for sales as bushy well-developed plants for late May. Same watering, feeding, etc. as annuals. No light or shade. Night temperatures of 50°, or better yet 45° (and cool days), retard the tendency toward premature buds. Lighting the plants 3 hours per night will also help avoid buds.

More and more growers are shifting over to use of newer **growing containers** for spring garden mums. The Jiffy-Pot (see page 131) is ideally suited for this.

Some growers handle them in regular Market-Paks—at less cost by the way!

A nice block of Garden mums in 6 inch cans for fall sale in flower. Photo at Hills Nursery, Dundee, Ill., world-famous for evergreens. Jack Hill has done some interesting pioneering in use of peat-sand mixtures (U.C. Mix) in container growing of nursery stock. In the photo, left to right, Mssrs. Costa and Fisher.

Pot mums used in combination

Mums are coming into quite general use for combination boxes. They add bright colors and lots of them, they are compact growing, they stand transplanting well both into the combination box and later to the customer's garden. Garden varieties, used in this fashion, flower again in the fall for the customer.

Culture: use regular greenhouse pot mum schedules and variety suggestions. See page 85. Grown in Jiffies, they can be planted to the combination pot and all.

Garden mums set out in May for fall sales

Here's a really low cost way to turn some dollars out of that patch of unused land around your place.

Rooted cuttings are simply planted outdoors soon as frost danger is past. They will develop better if they are given a square foot or more per plant. They should be generously fed and watered through the growing season. Pinching must be tended regularly up till July 25—or even August 1 on the mid-October or later kinds. No shade or light.

They'll start showing color in late summer. They can be dug and potted to 6 inch pots, or to a **Bird Perennial Pot.**

4

YEAR ROUND POT MUMS

Year round Mums at Pikes Peak Greenhouses, Inc., Colorado Springs, Colorado. Left, Darrell Messick, Geo. J. Ball, Inc., Chuck Haley, and Howard Bowman. Year round pot Mums as well as year round pomps and standards are an important part of the general line of cut flowers and plants offered by Pikes Peak. The "Springs" area offers almost as much winter sunshine as south central Florida, warm but dry summer air which makes for efficient cooling—a climate hard to beat anywhere in the U. S. for year round Mum growing. The Pikes Peak range was one of the first in the area in year round production. They are known throughout Colorado and the Southwest for steady quality of their Carnations, year round Mums, and Roses.

FOR THE RETAIL GROWER

Pot mums flowered through the spring-summer months or even year round are a highly salable crop for medium and larger retail growers. An ever-increasing number are being produced by such growers. It is a crop that will bring in an exceptionally high dollars per foot return if they are reasonably well grown. To give a rough idea: a 400 sq. ft. bench in continuous production of 6 inch pot mums will turn out better than 50 pots every two weeks. This means 1300 pots per year—at $1.25 to $1.75 wholesale. This would total around $5 per sq. ft. per year. Even making a generous allowance for a week here and there of slow demand, a few culls etc., this is good money.

During the past spring, good pot mums have been in exceptional demand—especially for the holidays. Summer and fall demand has been generally good with occasional soft spots. Most growers report the least demand between January 1 and March—although many are sold then, too.

A night temperature of 65° is highly desirable for this crop—60° will do some varieties but not all of them. Growers who do not have a 65° house can solve this problem by partitioning off the last 50 feet of a 50° house—with a plastic partition. The regular heat lines are left as is. To provide the extra 15 degrees, a small unit heater with a separate thermostat is put in the 65° end. Pot mums tend to set bud more uniformly and better at 65°.

Suggestions

1. A part of the crop can be grown in 4 or 5 inch pots which seem to fit in well with many retail outlets. Some growers report substantially better earnings from the crop as a result of going to these smaller sizes.

2. Some growers say that occasionally when demand for flowers is keen and pots are moving slower, they help fill the gap by using the pot mums as cut flowers. Incidentally, pot mums may be held back an extra week or two by moving them to a 50° or even 45° house—but not before they are in color. If the shoe is on the other foot—good demand and not enough pots—a day and night temperature of around 65° will make them come faster. **Still warmer actually retards them.**

3. Use of naturally shorter, larger flowered kinds is recommended for retail growers. Among the best: Wilson's White, Oregon, Bonnaffon, Delaware, Wilson's Yellow (for a nice cream), Yellow Delaware, Portrait, Blue Ribbon. Taller growers will make very nice plants; require extra care.

FOR THE WHOLESALE POT PLANT MAN

Pot mums have become one of the major wholesale pot plant crops. Furthermore, their uses as a wholesale pot crop continues to increase, especially in spring, summer, and fall. Few if any of the so-called "holiday pot crops" can equal pot mums in dollars per foot sales over the year. None of them have anything approaching a year round sales season. Certainly a wholesale pot plant man is missing a good earning crop if he isn't in year round pot mums to the extent that he can move them in his area.

Some Suggestions

In WHITES: Oregon is now definitely #1—bushy growth, pure white, large flowered, reliable. **Ensign,** a creamy white seedling of Bonnaffon, a free breaker, and less temperature sensitive than Bonnaffon. Looks promising.

Snowclad, a pure white, quite bushy and exceptionally good in the winter. Should be worth the try. **Snow Crystal** is an exciting "lacy" novelty. Also suggest trials of **Chalk Cliff, Whitehouse,** and **Fred Shoesmith** as a pot plant.

YELLOWS: Yellow Delaware heading fast for top spot—really hard to beat! Try **Luminary** (summer only), another Bonnaffon seedling, especially fine during hot weather. **Yellow Fred Shoesmith** shows promise as a pot plant. **Wilson's Yellow**—a fine cream.

PINKS: Blue Ribbon and **Personality** still seem the top two. Several fine new ones: **Mermaid,** short grower, 10-week (can be scheduled with Oregon), especially fine color, spreading growth. **Pink Deluxe**—4-5 inch loose informal flowers, bushy and very showy. Suggest trials also of **Vedova** and **Venoya** and **Handsome.**

BRONZES: Delaware remains #1. **Red Humdinger,** a newcomer, has a terrific deep maroon color in cool weather. **Incurved Delaware**—identical to Delaware except that petals incurve covering the center. Also gives much more of the deep maroon effect and less of the buff. Looks good. Suggest trial also of **Valentine.**

2. More and more, wholesale pot men are diverting their pot mum production to sizes other than 6 inch. Growers feel that they can sell **more** plants this way, and realize more dollars per sq. ft. In some cases, growers meet opposition to a $1.75 price for a 6 inch, but **can** get $1.25 for a 5 inch. Quite a number are being grown in 4's. For the better class of trade, some 7 and 8 inch plants will move at higher prices.

It's one of those cases where each grower must feel out his trade.

3. **No pinch for top quality.** For the grower who has a considerable amount of the "carriage trade" shops, a spectacularly fine, large plant can be produced by growing Indianapolis, Shoesmith and other short varieties no pinch, ten cuttings to an 8 inch pot or seven to a 6 inch. Plants are given short days immediately after potting, no lights. Flowers are very large—often comparable to cut flower size. Only ten weeks from potting cuttings to flowering.

4. **Ball Mum Planning Service** stands ready to serve you in planning all details of your pot mum crop (page 1).

5

MUMS AS HOME FLOWERS

An interesting example of what can be done with one cutting in a 3 inch pot with Mums. The smaller pot sizes have already become quite important in various home flower projects. Varieties from the left: Yellow Calypso and Delaware. Schedules used were same as the BALL MUM GUIDE pot schedules in this book, single pinch. Spacing 5 x 6. Reducing space per plant, of course, increases production and lowers cost but at some reduction in flower size and quality. Crowding of course also aggravates height.

The flower business, up to now, has been nearly all special occasion gifts—funerals, weddings, sick bed gifts etc.—good steady business, but simply not capable of real expansion. Beyond doubt, the real potential for an expanded flower market lies in the area of "home flowers"—**the 98c bouquet or plant that the housewife buys (cash and carry) to decorate her own home.**

Test sales by our schools, and actual experience of a few pioneer growers, indicate a very large potential use for flowers here. A 50% increase in flowers used per person is entirely possible within five years. Europeans use 2½ times more flowers per person than we do—and have for years. And we are the nation of super salesmen!

To us it appears inevitable that Mums will play a leading part in the new trend to "home flowers." Why?

1. **They last longer** than all important competitors.
2. By correct planning the grower can produce the size, the stem length, the color he wants—when he wants it. No other major flower offers this degree of flexibility control.
3. **Variety**—Mums from ¾ in. (Pinocchio) up to 6-7 in. (Shoesmith) are offered in this Guide—in a wide variety of colors and flower types. Again variety is important in home flower sales.

Our Mum Planning Service is fully conversant with this aspect of Mum growing. If "home flowers" are coming up in your plans, MPS stands ready to lend a hand.

An interesting approach to "home flowers." These showy plants are grown two cuttings to a 4 inch plastic pot, single pinch. They are grown with a close eye to cost (close spacing, not disbudded), yet good quality. Photo at West Grove Greenhouses, West Grove, Pa. In the photo (left to right) Earl Hall, manager; Bill Franklin, G. J. B., Inc. representative. Varieties: held by Mr. Hall, Yellow Delaware; held by Bill Franklin, Delaware.

Standards

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

WHITE

Variety and Description	Normal Flowering Date	Price 50 Only
8-Week Varieties—Pinch July 10		
D **White Pink Chief.** Intermediate pure white incurved selection from Pink Chief. Tolerates 56°. Will develop pink tinges with cool (60°) finishing temperatures. Responds and develops well under high temperatures. Standards and fast disbud programs early May through mid-October.	Oct. 15	$4.00
N **Silver Sheen.** Pure white medium sized incurved. Good for September shadings and grown June through September under glass. Sets bud at 56°	Oct. 20	3.65
White Chief. Medium large	Oct. 20	3.90
Christina. Small incurved. Used for pots	Oct. 23	4.00
9-Week Varieties—Pinch July 16		
N **Silver Queen.** White Fujii mum. Stem improves Rayonnante. Best June to mid-October	Oct. 25	4.00
D **Marblehead.** Medium large pure white incurved. Good standard or fast disbud May-October.	Oct. 25	3.75
P **Granite State.** Pure white disbud. Good pot plant variety early March through June and October through December. Flowers not large, but attractive and reliable	Oct. 25	3.75
Mrs. Robinson. Medium large white incurved standard. All Saint's Day standard. Not recommended for northern areas	Oct. 25	3.90
N **Ambassador.** Large ivory incurved	Oct. 25	3.75
Moontide (NEW—Yoder Bros.). Medium to small ivory-white standard. Develops into a tightly incurved ball form. More accurately defined in appearance as an over-sized Luna flower. Fast growing variety. Highly recommended as a fast disbud from March through December. Withstands minimum of 56° in the spring for bud initiation. Available May 12	Oct. 28	4.50
PDN **Queen's Lace.** Very artistic pure white Spider Mum. Will flower at 56°. Fine greenhouse cut flower. Very good standard and disbud. Mid-March through mid-June then again mid-September to Thanksgiving. Also very showy pot plant year round	Nov. 1	3.65
Themesong (NEW—Yoder Bros.). Medium semi-incurved white standard. Possesses Good News petalage and durability. Adapted especially for summer and high light intensity periods. Sufficiently versatile to fit standard, fast disbud, and pot programs from June through mid-November. Tall treatment for pots. Non-restricted development and resistance to burning during the summer months. Vigor often surpasses that of Good News in mid-summer, though not quite as large. Available May 12	Nov. 1	4.50

INSTRUCTIONS FOR ORDERING MUMS

PRICES EFFECTIVE JANUARY 1, 1958

The minimum total order that can be accepted is 300 cuttings.

Fifty of each variety is the minimum that can be supplied. More than 50 of a variety must be in multiples of 50.

Orders must be marked with a definite delivery date, such as May 10th, June 1st, etc. Orders marked "Early Delivery," "Deliver when ready," "Spring Delivery," are too indefinite.

In writing your order, please use special order blanks enclosed with this catalog.

Prices subject to change without notice.

GROWER AGREEMENTS

The sale of cuttings of a majority of the varieties listed here as "new" (introductions for 1958) will be subject to limitations generally referred to as "grower's agreements." In effect, they will be simple agreements by purchasers of these varieties not to propagate them for resale. These agreement forms will be sent to customers around January 1, and must be returned to us prior to the date the cuttings are to be shipped.

LIMITATION OF WARRANTY

Geo. J. Ball, Inc., warrants to the extent of the purchase price that seeds, plants, or bulbs sold are as described on the container within recognized tolerances. Seller gives no other or further warranty, express or implied.

SUBSTITUTIONS

We will substitute varieties as good or better for any items not listed unless order is marked **No Substitutions.**

SHIPPING INFORMATION

Special shipping instructions and address if different from your regular mail address should be shown on your order.

All cuttings are shipped Railway Express, Air Freight or Air Express, collect. If you have any preference, designate on your order; otherwise our shippers will use their best judgment.

CLAIMS AGAINST CARRIER. Cuttings are in perfect condition when they are accepted by the transportation company. Our responsibility ceases when the carrier accepts shipment. We cannot be responsible for the safe arrival of your cuttings. If there is any damage enroute from being broken, heated, or frozen, **CALL YOUR EXPRESS** or **AIR FREIGHT AGENT** to inspect the shipment upon arrival, marking on express receipt or bill of lading the condition of the package, amount of damage, etc. If you wish, you may send this inspection report to us and **WE WILL FILE CLAIM. Do not return cuttings to us or to the propagator.** Advise us of errors in shipment and we will make adjustment.

IMPORTANT:
ABSOLUTELY NO CHANGES ON YOUR ORDER CAN BE ACCEPTED WITHIN 30 DAYS OF DELIVERY DATE

WHITE STANDARDS

Variety and Description	Normal Flowering Date	Price 50 Only
9-Week Varieties—Continued		
P **Wilson's White.** Fine pure white compact pot variety. Easily the number one white pot mum on the list in sales. At its best from early March through Decoration Day and through the summer and fall. Compact, spreading, free breaking habit. Short treatment. Occasional brown centers usually controlled by slower growing schedules now used. Keeping plants in the greenhouse till fully opened helps	Nov. 1	$3.50
N **Albatross.** A large incurved pure white standard. Used most heavily in California cloth house and greenhouse crop. Year round except for winter in northern California. Reliable bud set (56°) and good shipper. Fine for eastern greenhouses mid-September through Thanksgiving.	Nov. 1	3.40
Snow White. Large white incurved	Nov. 1	3.40
D **White Mary Garden.** White sport from Mary Garden. Spider. Best May-October	Nov. 1	3.90
P **Luna.** Small pleasing light cream incurved. A fine pot plant year round. Medium treatment. Sets bud at 56°	Nov. 1	3.75
Camille Baumann (NEW—Bauman). Medium to large single disbud. White spindle with tubular ray petals. Novel form that will enrich variation in fast disbud programs from April through mid-December. Especially valuable to retail growers. Available May 12	Nov. 3	4.50
PDN **Indianapolis White.** Medium large incurved pure white. By a wide margin, the top white standard on the list. Very heavily used in year round greenhouse production mid-September to early June. Not recommended for mid-summer—it tends to sunburn even under cooling. Very reliable and a good shipper. Also important pot plant year-round tall treatment. Rather shy breaker. Excellent pot plant grown single stem, 7 cuttings per 6 inch. No long days. Very important disbud year round	Nov. 5	3.15
Imp. Indianapolis White (NEW—Yoder Bros.). Selected for, and provides a very significant reduction of winter quilling in comparison with the original parent variety. During the winter, depth of flower is greater and incurvature improved. Proven to be devoid of pink tinges at low finishing temperatures. Slight ivory overcast until full maturity. This is the answer to growers who desire better form in their fall, winter and spring crops of Indianapolis White. Best for cool units. Not as tolerant to warm 60° in winter as Indianapolis White.	Nov. 5	3.75
10-Week Varieties—Pinch July 22		
N **Giant Betsy Ross.** Showy, pure white, large incurved standard. At its best under high temperature. Mid-June through October. Easily the number one standard for summer crop. Long stemmed and quite large flowered, especially under cooling. Excellent at normal season.	Nov. 5	3.40
Nightingale. Chartreuse green spider. Very popular West Coast novelty. This stock free of aspermy virus. Valuable from mid-September through December	Nov. 5	3.90
N **White Rayonnante.** White spider mum, straight tube. Excellent shipper	Nov. 5	3.90
P **Oregon.** Large white semi-incurved pot plant variety. Very good performance the year round in our trials. Stronger habit, larger and more beautiful flower than Wilson's White and no tendency to black centers. Vigorous breaking action. Flowers develop most rapidly when finished at 58-60° or less. Will rapidly become the number one white pot mum	Nov. 5	4.00
Snow Crystal (NEW—Yoder Bros.). Medium to large ivory white spider disbud. Fully double form. Feathery spooned petals. Captures much of the delicate Snowdrift form from which it was bred. Strong habit, and wiry stems make it an exclusively novel pot variety usable the year round. Best with tall treatment. Tolerant to wide ranges of temperature for initiation and development. Available May 12. See photo page 18	Nov. 5	4.50
Whirlwind. Large pure white reflexed standard for mid-July to mid-November cut flower program. Requires high summer temperatures for best response and development. Supplement for Betsy Ross. More durable, strong growth and heavy petalage. Shaggy, interesting new form. See color photo, page 10	Nov. 5	4.00
Susan Leighton. Large ivory white spider used for greenhouse cut flowers (mid-October to Thanksgiving). Pot culture early June through November (tall treatment). Finish cool	Nov. 6	3.90
D **Sentinel.** Medium large, ivory white, tightly incurved standard. Requires high light intensities. Standards and fast disbud programs mid-May to mid-November. See color photo, page 10	Nov. 8	4.00
Ensign (NEW—Yoder Bros.). Intermediate decorative disbud. An ivory-white Bonnaffon seedling of excellent substance with a slight cream center. Well adapted to either the fast disbud or pot plant programs from April through December. Tall treatment for pots. Earlier and taller habit than Bonnaffon. Available May 12	Nov. 10	4.50

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Note carefully instructions for ordering on page 8. No orders for less than 50 rooted cuttings of a variety accepted. Minimum total order, 500 cuttings.

50 only	$3.15	$3.25	$3.40	$3.50	$3.65	$3.75	$3.90	$4.00	$4.15	$4.25	$4.50
100-250 per 100	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.75
300-450 per 100	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.50
500-950 per 100	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.25
1000-up per 100	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	8.00

SENTINEL & WHIRLWIND

Top two flowers Sentinel, lower flower Whirlwind. These two whites were first offered during 1957. Both varieties are at their best during summer and early fall—in fact, both of them require high light intensity and high summer temperatures for best development. In our trials this past summer, Sentinel seemed particularly durable and reliable—quite free of petal burn problems, etc. Biggest fault, simply not a clear, clean white. Whirlwind, on the other hand, is pure white, quite large flowered, very reliable, even under hot mid-summer conditions. Its flower form is definitely shaggy, loose, and informal. Some growers consider it a very promising bread-and-butter summer white, others classed it as more of a novelty. See page 9.

FRED SHOESMITH

In our several years of year round trialing of the Shoesmiths, we have found them outstandingly large and fine from about October 1 through the winter and up till hot weather—late May. Chief advantage during the fall and spring is the substantially larger flower size, compared to Indianapolis. During the winter months, in the northern greenhouse, we have found it far superior to Indianapolis, which at that time becomes rather small, flat, and "quilly." Except in the very darkest winter areas and under the most adverse circumstances, we believe it will be the top winter mum. Strictly a premium quality mum—and, by the way, requires a bit more space than such varieties as Indianapolis. See notes below.

WHITE STANDARDS

	Variety and Description	Normal Flowering Date	Price 50 Only
	10-Week Varieties—Continued		
	Jean Elizabeth. Large semi-incurved	Nov. 10	$3.90
N	**Crystal Queen.** A sport from Orchid Queen. Improves Jean Elizabeth in clarity of color and compactness of flower. Standard program mid-September through June	Nov. 10	3.65
	White Pockett. Large incurved exhibition	Nov. 10	4.00
DN	**Mefo.** Fine large incurved creamy white standard. Top-notch variety for the northern winter greenhouse crop. At its best December through March. Must be finished at about 60° If flowered during warmer months, petals tend to droop and flower shows center. Will set bud at 56°. Also much used for shading and normal fall crops. Excellent disbud late fall-early spring. Long stem, reliable bud set	Nov. 10	3.40
N	**Monument.** Intermediate incurved, important for fall crop	Nov. 10	3.75
	White Yamane (NEW). Large disbud spider. Pure white. A West Coast variety	Nov. 10	3.90
	Fred Shoesmith (NEW). Outstandingly large, fine incurved white. Markedly excels the size and form of Indianapolis White through the fall, winter, and spring. Often goes to 7-7½ inches under favorable conditions. Its greatest value in our two years of trials at West Chicago has been its quality in midwinter—when Indianapolis becomes flat, quilly, small. One mid-winter trial in a very cloudy area displayed some stem weakness—not in our experience a general fault where "cool 60°" is held. Not recommended for hot weather even with cooling—it burns. Late 10 or early 11-week response. Tolerates 56°. Promising for pots—fall and spring, tall treatment. Bred by Harry Shoesmith, England. Truly a premium mum when well done. See color photo above	Nov. 12	4.25
	11-Week Varieties—Pinch August 5		
	Sterling. Large pure white incurved	Nov. 15	4.00
N	**Marketeer.** Medium large chalk white incurved. For greenhouse cut flowers and disbuds. Mid-October through April. Used some for pot growing (tall treatment) October-November	Nov. 18	3.65
	John Baumann (NEW—Baumann). Large paper-white spider. Duplex form. Partially spooned petals. A novel and efficient retailer's item, best grown in a fast disbud program from October through May. An exceptionally fine winter performer in the north. Considered faster and much more reliable than Illini Starflower during the spring months. Available May 12.	Nov. 20	4.50
	White Frick. Medium large incurved, short habit. Tinges pink at low temperature	Nov. 20	4.15
	Indiana Market. Intermediate incurved, similar in habit to December White	Nov. 20	4.15

WHITE STANDARDS

P—Varieties best for pot culture **D**—Varieties that make good disbuds
N—Best varieties for fall or natural season flowering (without shade)

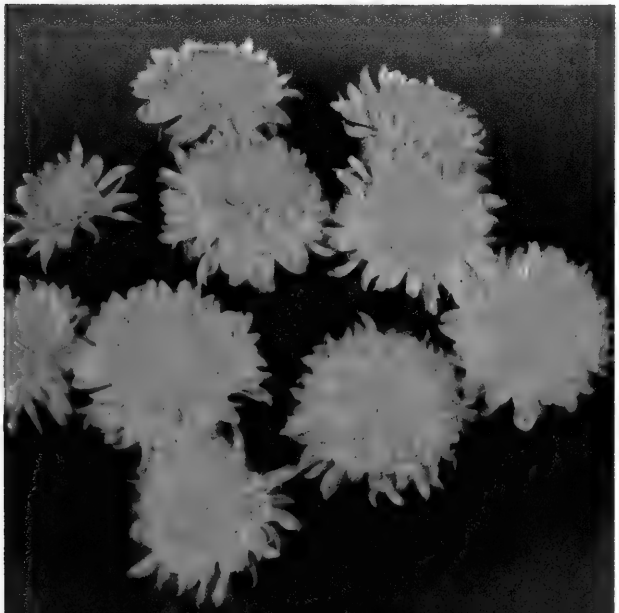
	Variety and Description	Normal Flowering Date	Price 50 Only
	12-Week Varieties—Pinch August 10		
D	**White Peter John.** Clear white decorative. Standard or fast disbud. October 1-January 15. Requires 60° for bud initiation, 55° for development. Sport from Peter John	Nov. 25	**$3.90**
N	**Chattanooga.** Large pure white incurve. Used mostly for normal (Thanksgiving) flowering Best finished at cooler temperatures. Used some by southern growers for winter flowering.	Nov. 25	**3.75**
DN	**December Glory.** Medium large incurved white. Important for normal flowering; grown some into January-February.	Dec. 1	**3.75**
	Margaret Moeller. Medium large incurve. Rather short grower	Dec. 3	**3.75**
	13-Week Varieties—Pinch August 15		
	White Mistletoe. Medium large tall incurve . Best results require 50° finish	Dec. 5	**4.15**
N	**Smith's White.** A medium large semi-incurved white. Heavily used for late normal blooming. Holds well for Christmas	Dec. 10	**3.65**
	December White. Medium large incurve	Dec. 15	**3.90**
	Snowline. Large showy white flower. Requires 60° to initiate buds	Dec. 20	**4.00**

YELLOW STANDARDS

	8-Week Varieties—Pinch July 10		
D	**Harvest Golden.** Large deep golden yellow decorative. Excellent disbud April 1-Thanksgiving.	Oct. 15	**3.75**
P	**Gold Lode.** Medium large lemon yellow reflexed. Garden and greenhouse disbud, grown some in pots	Oct. 15	**4.00**
D	**Celestra.** Deep lemon yellow semi-incurved disbud. Tolerates 56°	Oct. 15	**4.00**
P	**Sunburst.** Intermediate golden yellow, reflexed decorative. Vigorous and prolific. Pots and fast crops. An outstanding supplement for Bonnaffon Deluxe. Tolerates 56°	Oct. 20	**4.00**
N	**Mrs. Kidder.** Large, golden yellow incurved	Oct. 20	**3.75**
	Butterball. Intermediate deep lemon incurved	Oct. 20	**3.90**
PDN	**Blazing Gold.** A medium large semi-incurved bright yellow. Used heavily as a pot mum (March 1-November 1). Has fairly compact pot plant habit, a hard flower (stands outdoor flowering). It does not break freely and has rather upright growth, so requires one extra cutting per pot. Used considerably as a fast disbud and standard (April 15-November 1). Tolerates 56° for bud set	Oct. 23	**3.50**

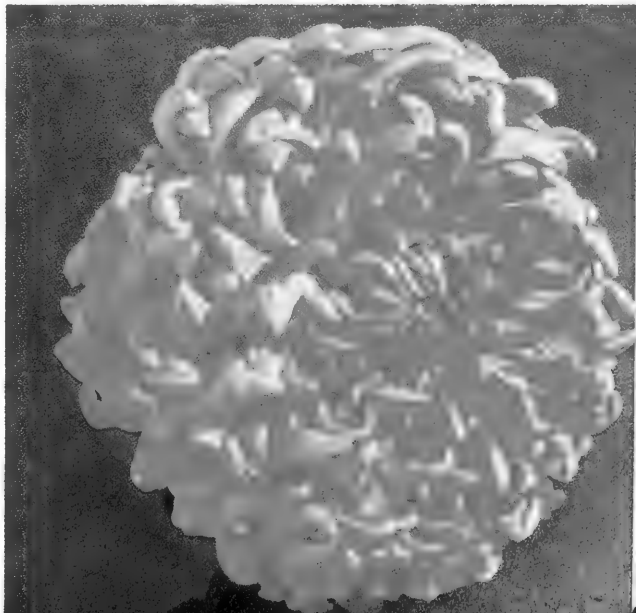
WILSON'S YELLOW

A pleasing lemon yellow sport of Wilson's White. This is one variety that must be finished at 50° or even cooler to bring out its true color. Very popular in Europe—where it is normally finished in a sash house, just above freezing. See page 12.



YELLOW CALYPSO

The several Calypso varieties, also imports from Europe, are strictly pot varieties—and very good ones. Most favorable experience has been during the fall months—which means high temperature for bud set and cool finish. Strictly for pots. See page 13.



YELLOW STANDARDS

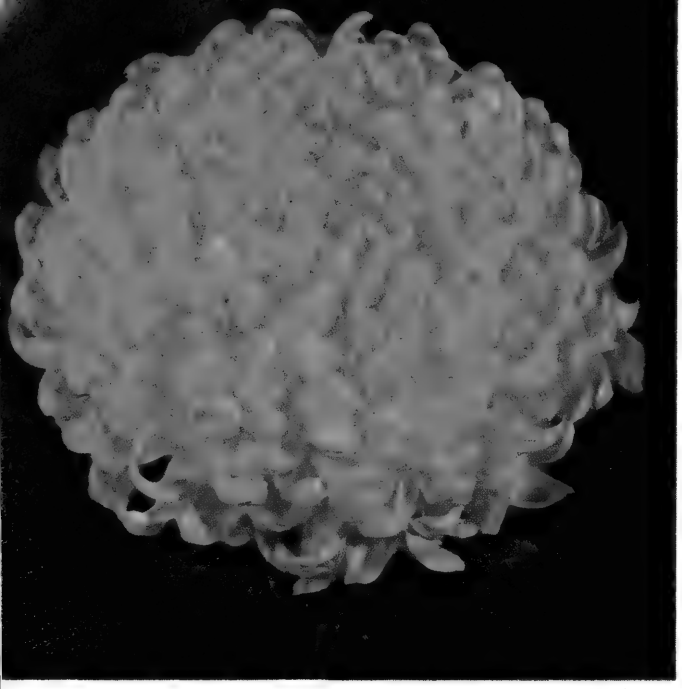
P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	9-Week Varieties—Pinch July 16		
	Brighton Yellow. (NEW). Large incurved standard mum. Intense golden yellow. Of English origin. Early and efficient for its short duration of use both as a standard and fast disbud from mid-April through June. Variety crowns prematurely when grown in high temperature environments. Shares no equal for color and size in its response group. A spring variety with speed and vigor. Available May 12	Oct. 25	$4.50
P	**Georgia.** Medium large dark yellow incurve. Pot variety. Compact growth. Sets bud at 56°. Short treatment March 1-December 1, but best in fall	Oct. 25	3.75
	Yellow Ambassador. Intermediate light lemon yellow incurve	Oct. 25	3.90
DN	**Luyona.** Large yellow spider mum with quality bloom and heavy stem. Excellent standard or fast disbud year round under glass. Petals stand out horizontally	Oct. 25	3.90
	Yellow Marblehead (NEW—Rosacker). Medium lemon-yellow incurved. Sport of Marblehead. Recommended for standard and fast disbud programs from May through October. The Marbleheads require the high light, high temperature combination to achieve maximum stretch and flower size. Available May 12	Oct. 25	4.50
	Sunglow. Large golden yellow incurve	Oct. 25	3.90
	Moribana. Intense golden spider with a prominent disc. Very good substance and strong stems, an excellent spider of lasting quality, responds to shade readily	Oct. 28	4.25
	Yellow Albatross. Large incurve, light lemon yellow	Nov. 1	4.25
P	**Yellow Lace.** Lemon yellow sport of Queen's Lace. Important pot plant year round (tall schedule). Excellent novelty standard and fast disbud. April 1-November 15	Nov. 1	3.75
PDN	**Gold Lace.** Golden yellow Lace sport. Excellent pot plant (year round tall procedure). Free breaking, spreading habit, but often requires staking. Striking novelty cut flower and disbud March 15-November 15	Nov. 1	3.75
P	**Wilson's Yellow.** Fine lemon yellow sport from Blanche Poitevine known in this country as Wilson's White. A valuable partner to Wilson's White in any pot plant program. At its best mid-March through June 1 and again in fall (short procedure). Color develops best with low temperature finish. See color photo, page 11	Nov. 1	4.00
DN	**Good News.** Medium large fine golden yellow standard. Definitely number one yellow standard for the June-November greenhouse crop. Stands heat well. Important in California cloth house crop. Hard flower and excellent shipper. Tends to short stem. Tolerates 56°. Fine at normal season. Excellent disbud March 15-November 15	Nov. 1	3.15
D	**Yellow Ivanhoe.** Golden yellow sport. Tolerates 56°. Excellent disbud year round	Nov. 1	3.75
	Blazing West (NEW). Golden yellow. Large incurved possessing exceptional stem quality	Nov. 1	4.50
	Imp. Indianapolis Yellow. Light golden yellow selection of Indianapolis Yellow. Displays best form for yellow Indianapolis under northern winter conditions. Fine standard and disbud mid-September through June. Important pot plant year round—tall schedule	Nov. 5	3.25
PDN	**Indianapolis Yellow.** Large lemon yellow incurved. Indianapolis Yellow and its sports are by far the most heavily grown yellow standard. Most heavily used in year round greenhouse cut flower programs mid-September through mid-June, although growers in areas with cooler summers sometimes flower them all summer. Excellent at normal season. Top-notch disbud year round and extensively used as such. Important pot plant variety year round. (tall treatment)	Nov. 5	3.25
	Indianapolis Gold. Large incurved standard. Color is a definite golden yellow—not lemon. Same growth habit and flower size. Excellent standard and disbud. Important pot variety	Nov. 5	3.75
P	**Dark Indianapolis Yellow.** Deeper color and slightly shorter in growth habit than Indianapolis Yellow. Best response. Deep lemon yellow. Excellent standard April through June and mid-September through December. Important pot variety April through December	Nov. 5	3.50
	10-Week Varieties—Pinch July 22		
D	**Chairman.** Large golden yellow decorative. Fast disbud programs. Tolerant to 56° for bud initiation. Vigorous	Nov. 5	4.00
	Luminary (NEW—Yoder Bros.). Intermediate yellow disbud. Decorative form. A Bonnaffon seedling that performs at its best in pots during the warm periods of the year from mid-June through October. Medium treatment. Extremely vegetative and non-responsive during winter and early spring in the North. Same spreading habit as parent. When Bonnaffon Deluxe stalls in the summer, switch to Luminary. Available May 12	Nov. 5	4.50
	Yellow Betsy Ross. Medium large lemon yellow incurved sport. Same high temperature tolerance of parent variety. Shorter growth, somewhat smaller flower size, but tightly incurved and excellent substance. Best July 1-September 15 under glass	Nov. 5	4.00
N	**Yellow Rayonnante.** Yellow sport of Rayonnante. Straight tube. Requires high light and low temperature for strong stems. Best in fall	Nov. 5	3.90

YELLOW STANDARDS

Variety and Description	Normal Flowering Date	Price 50 Only
10-Week Varieties—Continued		
Imp. Yellow Rayonnante (NEW). A clear yellow selection of Yellow Rayonnante with increased size and improved form. Vigor and stem strength are also greater. West Coast variety	Nov. 5	$3.90
Yellow Leighton. Lemon yellow sport from Susan Leighton. More rigid stems and cleaner growth than Yellow or Gold Lace. Fine summer and fall pot variety (tall procedure). Standards October 1-December 1	Nov. 6	4.00
Gordon Wells (NEW). Intermediate lemon yellow incurved. Perfection in incurved form for winter. Responsive, but shatters when subjected to high temperatures. Provides a useful supplement to Indianapolis Yellow in standard and fast disbud programs	Nov.8	4.25
P **Yellow Calypso.** Large lemon yellow incurved. Very compact, bushy. Strictly a pot plant variety. Sport of Bronze Calypso. Best with high temperature initiation and cool finish. See color photo, page 11.	Nov.8	4.00
P **Yellow Delaware.** Medium large, deep lemon yellow incurved sport of Delaware. Excellent pot plant (short procedure) year round. Rapidly replacing Bonnaffon Deluxe—less sensitive to low temperature and a more dependable grower. Compact, large free blooming, and very showy. See color photo, page 14	Nov.8	4.00
N **Yellow Queen.** Large light lemon semi-incurved standard (September 15-June 1)	Nov. 10	3.65
Yellow Pockett. Large light lemon incurved exhibition	Nov. 10	4.15
DN **Yellow Mefo.** Large, fine, deep lemon incurved. An excellent yellow standard for fall (normal) flowering and in the year round program December through March. Responds quickly and well to lighting and shading. Fine large flower and a fair shipper. If flowered during warmer months, it tends to show centers and also to "dropping" of petals	Nov. 10	3.40
Cream Mefo. A cream colored sport from Mefo. Greenhouse cut flower December through March. Tolerates 56°	Nov. 10	3.90
N **Yellow Monument.** Medium large light lemon yellow incurved. Important in fall	Nov. 10	3.75
Golden Shoesmith (NEW). Very large and outstanding golden yellow incurved standard. A deeper golden yellow sport of Yellow Shoesmith. Recommended for same periods as Fred Shoesmith (see page 10). A truly outstanding golden yellow standard for fall, winter, and spring on the year round program. Available May 12	Nov. 12	4.50
Honeydew. Medium lemon yellow incurved	Nov. 12	4.00
Yellow Shoesmith (NEW). Fine, large yellow incurved standard. Rich yellow sport of Fred Shoesmith, identical in most respects to parent. Somewhat tighter form incurvature and less lower petal reflex. For recommended flowering periods, etc. on the Shoesmiths, see Fred Shoesmith, page 10. The Shoesmiths are lending new hope to larger and better greenhouse standards during periods for which they are recommended. In general they flower more promptly and with better quality if finished cool—58-60° nights and days, better yet, 55° the last several weeks. Promising for pot culture—spring and fall—tall treatment. Available May 12. See color photo, page 14	Nov. 12	4.50
Yellow Waikiki. Large spider. Clear lemon-yellow sport from Waikiki. Similar in habit. Splendid in either the regular or disbud programs, October through mid-November	Nov. 13	4.25
11-Week Varieties—Pinch August 5		
Lorraine. Lemon spider, hooked tube	Nov. 15	4.15
Yellow Marketeer. Lemon yellow sport from Marketeer. Standard or fast disbud October 15 through April. Pot plant (tall procedure) October-November	Nov. 18	4.00
P **Bonnaffon DeLuxe.** Medium large deep lemon incurve pot variety. Medium treatment year round. Still the most heavily used of all varieties for pot growing. Compact spreading habit and a free breaker. Requires 65° for bud initiation—and critical on overwatering. Medium treatment, year round	Nov. 20	3.15
N **Friendly Rival.** Medium large intense golden yellow incurved. Tolerates 56°	Nov. 20	3.75
N **Harvester.** Medium large deep lemon yellow incurved. Valuable for Thanksgiving. Will flower October 15-April 15 on regular 60° winter programs	Nov. 23	3.65
Marie DePetris. Medium large, deep yellow incurved standard for November 15-January 1. Popular for Thanksgiving	Nov. 23	3.75
12-Week Varieties—Pinch August 10		
D **Yellow Peter John.** Large light lemon yellow decorative. Requires 60° for bud initiation, 55° for development. Standard and disbud October 1-January 15	Nov. 25	4.00
Dark Yellow Chattanooga. Deep lemon yellow sport. Fine for Thanksgiving	Nov. 25	3.75
N **Yellow Chattanooga.** Large light lemon incurved. Heavily grown for Thanksgiving and fall shading.	Nov. 25	3.90
Golden Pearson. Medium large incurved. October 15-April 1	Nov. 25	3.75
Sungold. Large lemon yellow incurved. Used in natural pot programs	Nov. 25	3.90
D **Yellow Glory.** Medium lemon yellow incurved. Color mutation from December Glory. Standard and disbud November 15-February 1	Dec. 1	3.90
N **Golden Mrs. Ross.** Large deep lemon incurved	Dec. 3	3.75
Yellow Moeller. Sport of Margaret Moeller. Not quite as large or tall as parent	Dec. 3	4.15



YELLOW SHOESMITH

Splendid very large flowered standard for fall, winter, and spring under glass. A sport of Fred Shoesmith (see notes page 10). Perhaps a little smaller petalled than its parent, but otherwise identical, except for its fine golden yellow color. An importation from England. See page 13.

YELLOW DELAWARE

This fine import is rapidly replacing Bonnaffon Deluxe in the U.S. pot mum crop. Reasons: larger showier flower, ability to set bud cheerfully at 60° (Bonnaffon needs 65°), and much less sensitive to overwatering or lack of soil aeration. Also it tends to flower shorter than Bonnaffon. Tendency to show open centers can be improved considerably by applying a 14-7 interruption. Write our Mum Planning Service, if interested. See page 13.

YELLOW STANDARDS

	Variety and Description	Normal Flowering Date	Price 50 Only
	13-Week Varieties—Pinch August 15		
	Chalice. Large lemon incurved	Dec. 5	$4.15
	Golden Mistletoe. Medium incurved, light golden	Dec. 5	4.15
N	**Tobin's Yellow.** Medium large deep lemon semi-incurved. Most widely used for late December flowering normally.	Dec. 10	3.65
	Smith's Cream White. A beautiful smooth cream colored sport from Smith's White	Dec. 10	4.00
N	**Meteore.** Medium large deep lemon semi-incurved	Dec. 13	3.75
	Dauntless. Small golden yellow semi-incurved	Dec. 13	4.15

PINK STANDARDS

	8-Week Varieties—Pinch July 10		
DN	**Pink Chief.** Medium sized lavender pink standard. Suggested September 15-November 1. Best at natural season. Good disbud. Tolerates 56°	Oct. 15	$3.75
	Major Bowes. Medium large lavender incurved. Short. Early greenhouse and outdoor disbud.	Oct. 20	4.00
	9-Week Varieties—Pinch July 16		
DP	**Blue Ribbon.** Small, bright lavender pink, incurved standard. Excellent for pot plant programs year round (medium treatment 60°). Color greatly improves Queen of Pinks especially at high temperatures. Superb fast disbud, best grown at 56°, March 1-May 31 and in the fall.	Nov. 1	4.00
	Bunbu. Large, fully double, spooned tip spider. Medium lavender pink color. Tall vigorous habit with rigid stems. Is a dependable performer in either the standard or fast disbud program from April through November. Superior to Mary Garden. Often requires some shade protection during the finishing period to prevent petal tip burn	Nov. 1	4.25
DN	**Mary Garden.** Pink spider. Tube. Standard or fast disbud April 15-June 15 and September 15-Thanksgiving.	Nov. 1	3.90
P	**Queen of Pinks.** Excellent compact pink pot plant variety. Heavily used from September-June 1 (medium treatment). Best if finished cool. Very pleasing soft color which lightens under high temperatures. Not a generous breaker after pinching, so is usually given one extra cutting per pot	Nov. 1	3.50
PDN	**Indianapolis Pink.** A medium large incurved standard, bright pink shade. It is this fine color, plus the general good habits of the Indianapolis varieties, that has made this definitely the number one pink standard for cut and disbud. Like the bronze, it will fade during hot weather, but is heavily used the rest of the year. Excellent at normal season. Will set bud at 54°. Fine disbud (November-June) and pot plant (tall treatment) September-June.	Nov. 5	3.25

PINK STANDARDS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	10-Week Varieties—Pinch July 22		
	J. W. Prince. Medium large, lavender pink incurved standard	Nov. 5	$3.75
N	**Rayonnante.** Spider, tube petal. Heavily used in California	Nov. 5	3.90
	Orchid Queen. Large, light orchid pink, semi-incurved standard for September 15-June 15.	Nov. 10	3.75
	Pink Deluxe (NEW—Yoder Bros.). Medium to large lavender pink disbud. A significant achievement in the development of flower size within the pinks available for pots. Four to five inch decorative type flowers are produced on a Bonnaffon type chassis. Heavy stems, short internodes, with free and wide-angled breaking action. Can be efficiently flowered in pots 12 months of the year with either medium or tall treatment. A variety for those who seek the best. Available May 12	Nov. 10	4.50
	Lavender Queen. Lavender sport of Orchid Queen. Flower more compact and color more intense than that of Dark Orchid Queen. For standard program September 15-June 15	Nov. 10	3.75
N	**Dark Orchid Queen.** Large, semi-incurved, deep lavender standard. Fine for September-early May under glass and for California cloth house. Very strong stem. Will fade at high temperatures.	Nov. 10	3.65
D	**Laughter.** Medium large, light lavender pink, semi-incurved disbud. Tall grower. Performs reliably in both standard and fast disbud programs year round; fine in summer greenhouse.	Nov. 10	4.00
	Masumi Pink. Large incurved, deep pink	Nov. 10	4.15
D	**Merriment.** Large, medium lavender pink, decorative disbud. Fast vigorous growing variety that will tolerate 56° for bud initiation. Good standard and fast disbud (September 1-June 15).	Nov. 10	4.15
	Plum (NEW—Baumann). Large silvery lavender duplex spider. Petal completely tubular and partially incurved. A close counterpart to the old Vivacious Lady. Equal to the flawless dependability and superb growth habit of Luyona. Available May 12	Nov. 10	4.50
	Pink Yamane (NEW). Large lavender pink spider. West Coast variety	Nov. 10	3.90
	Peggy Hoover. Spider. Light pink tube	Nov. 10	4.15
	Pink Pockett. Large lavender pink incurved exhibition	Nov. 10	4.15
	11-Week Varieties—Pinch August 5		
	Aristocrat. Medium large lavender incurved. Fast stretch and strong stem. Natural season standard and disbud November 1-late December. Tolerates 56°	Nov. 15	3.90
D	**Calvert's Pink.** Medium large incurved, orchid pink suffused with salmon. Fine standard (November 1-December 30) pot plant October 1-April 30, medium treatment. Rich color unsurpassed for Thanksgiving flowering. Short variety. Must be kept at 55° or lower after buds show	Nov. 17	3.75
	Rose Delight. Medium to small semi-incurved. Lavender rose. Strong, vigorous habit, well suited to fast disbud and standard programs (October 1-November 30). A valuable color for Thanksgiving	Nov. 20	3.90
N	**Helen Frick.** Medium large incurved standard for cut flower and pot plant use. Pleasing silvery pink color	Nov. 20	3.90
DN	**Thanksgiving Pink.** Medium large orchid pink reflex. Good standard or fast disbud October 1-February 1	Nov. 23	3.90
	Ed Seidewitz. Medium large, incurved, smooth lavender. Standard (November 15-January 31), fast disbud (November 15-March 31)	Nov. 23	3.90
	Light Peter John. Lavender, reflexed used very extensively as disbud or China Mum along the West Coast	Nov. 23	4.00
	12-Week Varieties—Pinch August 10		
D	**Pink Peter John.** Light orchid pink decorative. A medium-small standard but largest of the Peter John group. Standard and fast disbud October 1-January 15. Requires 60° for bud initiation, 55° for development	Nov. 25	4.00
	Dark Pink Peter John. Deep orchid pink decorative. Color intensification of Pink Peter John. Standard and fast disbud October 1-December 31	Nov. 25	4.00
	13-Week Varieties—Pinch August 15		
	Pink Mistletoe. Medium large light pink incurved. Finish cool	Dec. 5	4.15

BRONZE AND RED STANDARDS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	8-Week Varieties—Pinch July 10		
DN	**Mayford's Triumph.** Fine warm orange bronze disbud. May, June and in fall. Tolerates 56°.	Oct. 15	$4.00
D	**Amber Bright.** Large golden bronze disbud for April 1-January 1 especially good at high temperatures. Tolerant of 56°	Oct. 15	3.90
	Zylon (NEW—DePetris). Medium crimson incurved. Excellent for garden or early greenhouse use. Responds well to cloth house shading	Oct. 20	4.50
	9-Week Varieties—Pinch July 16		
	Dorothy Hyde. (NEW). Intermediate semi-incurved disbud. Bright orange-bronze. Greater tolerance to low light and temperature conditions allows it to be flowered several months earlier than Fred Yule in the spring. Buds will initiate and develop at 56° or above. Fine fast disbud from March through October. Most attractive if cut slightly green. High summer temperatures tend to reduce size. Available May 12	Oct. 25	4.50
DN	**Hilda Bergen.** Nice bright bronze incurved disbud	Oct. 25	4.00
	Red Glitters. Red sport of Glitters	Oct. 28	4.15
	Antique. Copper bronze spider with strong stem. Greenhouse standard mid-September-Thanksgiving. Pleasant reddish bronze disbud (September through June) and standard, September through Thanksgiving. Tolerates 56°	Nov. 1	4.15
	Duchess (NEW—Baumann). Medium to large bronze spider mum, sometimes called a "Spindle" mum. Duplex form. All petals are straight and tubular. Good flower substance. An ideal fast disbud from April through July and mid-September through November. Duchess along with Luyona, Plum, and John Baumann, is a beautiful novelty that will contribute to the eventual recognition of the fast disbud as a new mum item. Available May 12	Nov. 1	4.50
D	**Ivanhoe.** Small reddish bronze incurved. Tolerates 56°. Fast disbuds and standards	Nov. 1	3.90
	Apricot Queen. Golden orange incurved standard. Used in the fall and sometimes in pot (medium treatment—April, May, and in fall)	Nov. 1	4.15
DN	**Detroit News.** A fine medium large bright bronze incurved. Most heavily used bronze standard. Excellent under glass April 1-June 15 and September 1 through November. Also popular as a disbud through same period and in some areas through the winter. Sets bud uniformly (tolerates 56°), and ships exceptionally well. Only medium tall growth	Nov. 1	3.40
	Royal Bronze. Warm orange bronze decorative. Tolerates 56°. Pot variety (tall treatment). April through May and September through Thanksgiving	Nov. 1	3.75
DN	**Fred Yule.** Very pleasing glowing orange bronze disbud. At its best in spring and fall but used May 1 through Thanksgiving. Vegetative during winter. Has vigor and stretch	Nov. 3	4.00
N	**Indianapolis Bronze.** Very fine, medium large incurved bronze standard. Color at its best during cooler seasons. Same reliable bud set and shipping qualities as other Indianapolis colors. Excellent standard and disbud, mid-September through mid-June and pot variety (tall treatment) same period	Nov. 5	3.50
	Indianapolis Golden Bronze. Semi-incurved sport. Pleasing color	Nov. 5	4.15
	Indianapolis Apricot. A warm bronze sport of Indianapolis Bronze. Slightly smaller, somewhat stronger habits. Color best in cool months. Standard and disbud mid-September through mid-June, pot plant variety (tall treatment) September-June	Nov. 5	3.90
DN	**Dark Indianapolis Bronze.** Deep reddish bronze sport. Same flowering period, etc., as Indianapolis Bronze. A very strong and excellent color	Nov. 5	3.50
	10-Week Varieties—Pinch July 22		
N	**Gena Harwood.** Bronze sport of Rayonnante. Spider	Nov. 5	3.90
	Nomago. Light bronze spider. Standard spring and fall	Nov. 5	4.00
	Mamoru. Buff copper spider	Nov. 5	4.15
	Luzon. Large apricot bronze spider, outstanding stem and flower quality	Nov. 5	4.15
P	**Delaware.** Hands down the number one bronze pot mum. Fine, compact, free breaking pot plant habit and uniform bud setter. Flowers are large incurved type up to 4 inches disbudded. Will show some center which can be minimized by interrupted lighting (write MPS). Will fade considerably at high temperatures but are still usable. Short treatment. See color photo, opposite page	Nov. 8	3.50
	Incurved Delaware (NEW—Ulery). Large standard. Tightly incurved form mutation from Delaware. Quite different in appearance from parent variety in that it holds its form and conceals the open center well past maturity. Since only reverse petal color is shown, overall color is more bronze, less red than a reflexed Delaware. Form provides greater substance. Recommended for pots the year round using short treatment. Becomes slightly shorter and flowers 3-4 days later than parent during the marginally low light intensity periods of midwinter. Available May 12	Nov. 8	4.50

DELAWARE

Without question, the number 1 bronze pot mum—year round. Growers like its compact spreading growth, large flowers, uniform, reliable bud set. Available this year is a new Incurved Delaware which is similar but without the open centers. Delaware itself can be improved in this respect by applying a 14-7 interruption. See page 16.

BRONZE AND RED STANDARDS

	Variety and Description	Normal Flowering Date	Price 50 Only
	10-Week Varieties—Continued		
P	**Bronze Calypso.** Large, rich orange-bronze, incurved and very short. Exclusively a pot plant variety. Single pinch. Best results are obtained with high temperature initiation and low temperature development. Medium treatment pot plant April-June and September-Thanksgiving.	Nov. 8	**$4.00**
	Darryl Chew (NEW). Large decorative standard. Deep reddish bronze. A West Coast variety	Nov. 8	**3.90**
N	**Anaconda.** Large red bronze incurved standard for fall	Nov. 8	**3.90**
	Ann Chew (NEW). Medium large bronze incurved. Short, West Coast standard	Nov. 10	**3.90**
	Br. Orchid Queen. Buff coral bronze sport. Standard mid-September-June	Nov. 10	**3.90**
	Copper Queen. Large copper bronze incurved sport of Orchid Queen. Larger flower and more vigorous than Bronze Orchid Queen. Standard program mid-September-June	Nov. 10	**4.00**
N	**Mrs. Roy.** Medium large incurved maroon-bronze, buff reverse. Excellent standard May-June and again September-January 1. Color lightens at high temperatures but remains attractive. Has never shown a center for us	Nov. 13	**3.65**
	Waikiki. Spider. Red bronze tube, yellow tips. Standard October-Thanksgiving	Nov. 13	**4.00**
N	**Garnet King.** Medium large, deep crimson red reflex. Standard November-January 1	Nov. 13	**3.90**
	11-Week Varieties—Pinch August 5		
	Balcombe Perfection (NEW). Medium large incurved standard. At its best at normal season (Thanksgiving) but excellent October 1-January 1. Rather short grower, improved by two additional weeks prior to shading. Cool finish improves substance and form. The number one bronze for mid-fall in England. See photo below	Nov. 18	**4.15**
	Red Balcombe Perfection (NEW). Medium large incurved standard, bright red with copper bronze reverse. Sport of Balcombe Perfection. Short variety. Suggest two additional weeks prior to shading. Fine substance and color, especially if finished cool. Excellent for Thanksgiving	Nov. 18	**4.15**

RED BALCOMBE PERFECTION

The Balcombes are probably No. 1 in the yellow-bronze class for fall flowering in England where they were produced (Shoesmith). We find them hard to beat over here for flowering during the fall, but they tend to require several more long day weeks to develop adequate stem. Also, best color develops if finished cool—50°. Excellent for Thanksgiving. (Listed above).

BRONZE AND RED STANDARDS

Variety and Description	Normal Flowering Date	Price 50 Only
11-Week Varieties—Continued		
N **Mrs. Eisenhower.** A vivid golden bronze spider mum with excellent substance and form. Standard program September 15-December 1	Nov. 18	$4.00
Stanley Naydo. Large bronze incurved standard. Sport of Armistice Day. Used predominantly in West Coast programs. Available May 12	Nov. 20	4.25
Valentine (NEW). Large red decorative disbud. Valuable winter pot plant, especially for Christmas and Valentine's Day. Tall treatment, October 1-April 30. The large, fully petalled flower and brighter red color improve Delaware. Excellent medium sized standard or disbud October 1-April 1 if given one additional week of long days prior to shading. Will initiate and develop buds at 56°	Nov. 20	4.25
Calvert's Gold. A medium large golden bronze semi-incurved. Form and nonfading color improve Apricot Queen. Fine standard or disbud October 15-April 30. Vigorous pot plant —medium treatment October 1-April 30. Regular and disbud crops require one additional long day week	Nov. 20	3.75
Bronze Frick. Medium large, salmon bronze incurved. Standard (November 1-30)	Nov. 20	4.15
12-Week Varieties—Pinch August 10		
Bronze Peter John. Large decorative, salmon rust suffused with yellow. Suggested as a standard and a disbud October 1-January 15. Requires 60° minimum for bud initiation; 55° for development. Sport of Peter John	Nov. 25	4.00
Gladys Pearson. Medium large, light copper bronze incurved. Excellent standard October 15-January 1, especially at normal season	Nov. 25	3.75
N **Oak Leaf.** Intermediate copper incurved. A dark bronze Gladys Pearson. Standard for October 15-April 1; best for Thanksgiving	Nov. 25	3.75
N **Muto's Crimson.** Medium large, deep crimson incurved. Copper reverse	Dec. 1	4.00
13-Week Varieties—Pinch August 10		
Bronze Mistletoe. Medium incurved buff bronze	Dec. 5	4.15

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Note carefully instructions for ordering on page 8. No orders for less than 50 rooted cuttings of a variety accepted. Minimum total order, 500 cuttings.

50 only	$3.15	$3.25	$3.40	$3.50	$3.65	$3.75	$3.90	$4.00	$4.15	$4.25	$4.50
100-250 per 100	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.75
300-450 per 100	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.50
500-950 per 100	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.25
1000-up per 100	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	8.00

SNOW CRYSTAL

Delightful feathery, pure white pot variety. Has hard, wiry stems. A showy and unusual novelty. See page 9.

ALASKA

A very free producing pure white anemone for the late summer-early fall greenhouse crop. Better production than Shasta. See page 20.

Pompons

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

WHITE

A Complete List of Garden (Hardy) Varieties on Page 43

Variety and Description	Normal Flowering Date	Price 50 Only
7-Week Varieties		
P **Ostosa.** A medium large paper-white pompon on a semi-dwarf plant. Excellent for spring pots (April 1-June 15) and for garden use in the fall. Short treatment	Sept. 25	$4.00
PN **Chris. Columbus.** A pleasing cream colored, medium sized decorative. Probably number one garden variety for spring flowering in pots (April 1-June 15), and fine in pots September 1-October 15. Short treatment. Excellent, compact garden variety for fall	Oct. 1	3.65
P **Larry** (NEW). Medium large paper-white pompon. Compact short habit defines its place as a high quality pot variety suitable for May and June and again in October using medium treatment. Flowers with Chris. Columbus. Not troubled by pink tinges at temperatures less than 60°. This is tops among the 7-week whites for pots. Available May 12	Oct. 1	4.25
Avalanche. Large decorative. Flowers on early crown buds	Oct. 5	4.15
N **Horizon.** "The" early garden white for late summer. Also early fall cut flower use. Pure white and a more formal type than Chris. Columbus. Nice as a garden variety at normal season.	Oct. 5	3.90
P **Benora.** Medium large white pompon with ivory center. Good pot variety April 1-June 15 and early fall (medium treatment). Real improvement over Chris. Columbus for durability. Prolific bloomer	Oct. 8	4.00
P **Maestro.** White pompon. Dwarf, compact growth. Excellent for borders and pot plants April 1-June 15 and September-October (short treatment)	Oct. 10	4.15
P **Classic.** Small white semi-formal pompon. Outdoor cut flower. Follows Horizon	Oct. 10	400
P **Silverplate.** White decorative pompon. Outdoor cut flower. Pot plant variety May 1-June 15 and early fall (medium treatment)	Oct. 12	4.00
8-Week Varieties—Pinch July 10		
Echo (NEW—Yoder Bros.). Paper-white formal pompon of medium large size. Flowers as early as Blizzard but represents an improvement in whiteness, larger flower, and a vastly superior spray formation. Lateral flowers develop at a smaller angle making the cutting and handling problem relatively easy. Recommended in the greenhouse spray program from May through October. Satisfactory outdoor cut flower. Available May 12	Oct. 15	4.50
P **Pilgrim.** Medium large pompon. Clear white. Temperature tolerance of Chris. Columbus, improving that variety in all respects. Durable, compact garden variety	Oct. 15	4.15
N **Blizzard.** Small formal pompon. Clear white. Tolerates 52°. Durable and productive. Spray programs July 1-September 1. Earlier, larger, more productive than Pinocchio. Best spray when treated as a 9-week variety	Oct. 15	3.90
N **Calif. White Daisy** (Kimoto's White). Medium large pure white daisy. For the very early cloth house. Very temperature tolerant	Oct. 15	4.00
Irene. Small white pompon	Oct. 15	4.15
PD **Gardenia.** Large white decorative pompon. Fine pot plant March 1-October 15. Medium treatment. Best when disbudded. Prolific and showy garden variety	Oct. 15	3.75
Norona. Small, ivory white, solid pompon	Oct. 15	4.00
Silver Ball. Large pompon; pure white	Oct. 15	3.65
N **Pristine.** Medium large, pure white pompon. Excellent in the greenhouse from late April through early June and again in early fall. Heavily used in the cloth house and in the winter crop in Florida. Suggest disspray	Oct. 20	3.65
Shibuya White. Medium large white daisy. West Coast variety. Larger than California White Daisy.	Oct. 20	4.15
N **Silvertone.** Medium large white daisy. Cloth house and greenhouse crop, May 1-October 15.	Oct. 24	3.90
9-Week Varieties—Pinch July 16		
P **Crest** (NEW—Univ. of Mont.). Medium sized formal pompon disbud. Ivory white with cream centers. Its dwarf habit makes it a first class pot variety for mid-March through mid-November medium treatment. A relatively fool-proof pot variety during high light intensity periods of the year. Will easily average 5 breaks per plant, much like Bonnaffon. Intolerant of winter low light environments. Available May 12	Oct. 25	4.50
Popcorn. Medium large white pompon. Light pink at low temperatures. Outstanding for production. See notes on White Popcorn	Oct. 25	3.75

WHITE POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	9-Week Varieties—Continued		
	White Popcorn. White sport of Popcorn. Both of the Popcorn varieties are very heavy producers—up to 1½ bunches per foot. Fine for greenhouse early June through September, also cloth house and at normal date. No trace of pink in White Popcorn at low temperatures.	Oct. 25	$3.65
	Crystallite (NEW—Yoder Bros.). Medium large formal pompon. Paper-white. Responds earlier than Keepsake or Igloo under high temperature summer conditions. Does not tolerate low temperatures for initiation. Response is uniform and rapid at 60° or over. A high caliber and efficient variety from May through mid-November as a natural spray in the greenhouse. Available May 12	Oct. 25	4.50
P	**Monty.** Medium large, clear white decorative. Excellent white pot plant especially in spring (late April through June), and in early fall, medium treatment. More durable than Wilson's White. Stretches and responds unevenly under high temperatures. Breaks freely	Oct. 25	3.75
	Silver Bow. Large white formal disbud pompon. Responsive and productive in the fast disbud program (April 1-November 30). High tolerance to summer greenhouse temperatures. A marked improvement over White Doty	Oct. 25	4.00
N	**Keepsake.** Number one among the 8 and 9-week white pompons. It's a white with a slight cream cast—and about the size of Gold Coast. We find it excellent in the greenhouse from early May up to normal date, although Whitetop gives it hard competition in May and early fall. Fine in early cloth house. Tends to pink at low temperature	Oct. 25	3.50
	White Keepsake. Medium large, ivory white pompon. Selection from Keepsake. Like White Popcorn, it is devoid of pink tinges at low temperatures. At high temperature finish, more ivory than Keepsake. Will tolerate 56°	Oct. 25	3.75
N	**Pinocchio.** A pure white, tiny button type flower. It provides welcome variety from the ever present "pomp." At its best in May-early June and September-October. Especially, popular for June and September weddings	Oct. 25	3.65
	Songster. Medium large pure white formal pompon. Has a rather limited season in our experience, at its best from mid-August till normal season in the greenhouse. Stands heat; in fact, needs it. Fine at normal date	Oct. 25	3.75
	Vesta. A trim white button pompon for summer and early fall (May 1-October 31). Best during summer-early fall. Excellent at natural season. Cloth house (July 15-October 31).	Oct. 25	3.90
	Arcadia. A medium large pompon	Oct. 28	4.00
	Memento. Medium large chalk white single with green discs and durable petals. Reliable in cloth house July 15-October 31, greenhouse May 1-October 31	Oct. 30	4.00
	Silver Cloud. Medium large white single for greenhouse (April 15-October 31)	Nov. 1	4.00
	Halo. White daisy for high temperature periods in the greenhouse (early May-October 31).	Nov. 1	3.75
	Sea Gull. Medium large ivory pompon	Nov. 1	3.75
P	**Snowclad** (NEW—Yoder Bros.). Medium, paper-white disbud. Semi-short stocky habit will provide a grower with a "never-fail" white pot mum the year round. Medium treatment. Flowers a week earlier than either Chalk Cliff or Oregon, and develops superb quality during the winter months when Wilson's White is questionably soft. Heavily petalled flowers contribute to a relatively long period of freshness. Bud initiation will take place in temperatures as low as 52°. Has class, substance, and is tolerant to high temperatures. Of Portrait size, it rates with the best. A pure white Criterion. Available May 12	Nov. 1	4.50
	Alaska. Medium large white anemone with white cushion. Pure white, very heavy producer, and excellent in the late summer greenhouse (July 15-September 15). A greater degree of cushion development than Shasta. Cloth house July 15-October 31. See page 18	Nov. 1	3.65
	Thistledown (NEW—Wash. State College). Medium to small novel white decorative pompon. An improved Snowdrift flower. Provides a more fully double form of feathery serrated petals, in addition to being a more clear white color. Also wider sprays. Natural spray programs from May through October. Becomes too tall for pot plant use. Faster, whiter Illini Snowdrift. Available May 12	Nov. 1	4.50
	White Doty. Large pompon and disbud. Heavily used disbud in the South	Nov. 1	3.90
	10-Week Varieties—Pinch July 22		
	Freedom. Medium large, pure white daisy. Fine green eyes. Cloth house (September 1-October 31) and greenhouse (Septembr 15-November 15)	Nov. 5	4.15
N	**Whitetop.** Fine glistening white, medium large, decorative pompon. In three years this unusually fine pure white, rose to the number one spot in white pompons. Excellent in the greenhouse late April-May and mid-September through November. Whitetop is very heavily used in Florida and in northern cloth house crops. Ships well and is a very good producer. Sets bud even at somewhat marginal temperatures. See page 22	Nov. 5	3.25

WHITE POMPONS

10-Week Varieties—Continued

	Variety and Description	Normal Flowering Date	Price 50 Only
	Tiptop (Krueger). A distinctive form mutation from Whitetop. The petals are completely tubular. Possesses fine substance. Valuable in the same periods as Whitetop	Nov. 5	$3.75
	Feathertop. (NEW—Krueger). An unusually beautiful sport from Whitetop. Petals are deeply serrated. Non-reflexing petal habit, coupled with partially tubular petals, contributes to larger flower size and more substance than parent. Chalk white with smart green eye	Nov. 5	3.75
DN	**Iceberg.** Large pure white pompon. Iceberg seems definitely headed for one of the top spots in 9-10 week white pompons for the greenhouse, cloth house and Florida. Noteworthy in the greenhouse for its ability to withstand summer heat, and for exceptionally long stems, and a heavy production. Sets buds evenly and well even at somewhat marginal temperatures. Recommended as spray pomp April 15-December 15 and cloth house August 1-October 31. Excellent as a disbud, year around. See page 22	Nov. 5	3.50
	Madonna. Medium large white pompon. Spring and summer cut flower (June 1-September 30). Does well at high temperatures. Cloth house (August 15-September 30)	Nov. 5	3.75
	Encore. Snow white, medium large pompon. At its best in the cloth house from mid-August through September. It's excellent from early September up to normal date under glass. Must have 60° to set bud. Very good production. Pinks at low temperature	Nov. 5	3.65
D	**White Anemone.** Large anemone, disspray and disbud	Nov. 5	4.00
PD	**Whitehouse.** Medium large white anemone for pot plants. At its best as a summer greenhouse pot plant under hot temperatures—a summer Little America. Recommended for pots (medium treatment) May 1-November 30. Very uniform and responsive	Nov. 5	4.15
	White Mensa. Large ivory daisy	Nov. 5	4.15
	Moonglow. Medium large pure white pompon. Requires 60° minimum for bud initiation	Nov. 8	4.00
P	**Chalk Cliff** (NEW—Yoder Bros.) Large chalk white decorative pompon. The answer to a white Portrait for pots the year round, using medium treatment. Foliage, habit, and flower form provide a striking resemblance. Somewhat larger than Portrait, its heavily petalled flower contributes to a very fresh appearance with extended keeping qualities. Also has a more vigorous breaking habit. A versatile and beautiful white. Available May 12.	Nov. 10	4.50
PN	**Pacesetter.** Pure white medium large daisy. Daisies generally aren't popular in pots, but Pacesetter and its yellow sport are among the standard pot varieties. Excellent flower substance, actually semi-double, and very hard stem, together with good pot plant habit are its assets. Recommended as pot plant (tall treatment) September 1-July 15. Also excellent spray pompon in spring and again in fall and in cloth house	Nov. 10	3.65
D	**Ice Cream.** Medium large creamy white decorative (3-4 inch flowers). White to cream, depending upon temperature. Very reliable, vigorous. A valuable addition to the fast disbud program—April 1-November 30. As large as Iceberg	Nov. 10	4.15
N	**Illini Igloo.** Medium large ivory pompon. Igloo is a tight, rather small formal pompon. It's durable—a good shipper. At its best under high temperatures and light, but will set bud and flower at 54°. Used in greenhouse from April 1 through November, and under cloth. At its best July-October	Nov. 10	3.65
DN	**Shasta.** A white anemone with creamy-yellow center. The fact that Shasta is one of the top two white pompons in cutting sales is a tip-off to its qualities. It is excellent in the greenhouse from late April through its normal flowering date. It is equally fine in the cloth house from early August through early October. Although not particularly recommended, it will flower satisfactorily through the winter in the northern greenhouse at 55° temperatures and is used that way. It is susceptible to verticillium	Nov. 10	3.25
	Dynamo. White pompon. Excellent at natural season. Requires 60° for initiation; 55° or lower for development. Greenhouse September 15-November 15 and cloth house	Nov. 10	4.00
	Vesper. Medium pompon	Nov. 10	4.00
	Nagona. Medium white daisy	Nov. 10	4.15
PN	**Little America.** Pure white medium to large anemone. We get best results in the greenhouse from mid-September through normal date. Fine at normal season. Used in the late cloth house. Very nice in pots, it finishes especially well in winter and spring. Needs disbudding. Makes a fine showy pot for Christmas or Easter	Nov. 10	3.65
	Stardust (NEW—Yoder Bros.). Formal white pompon of medium large size. Establishes a larger and more shapely Keepsake form. Its smart formal form has strong consumer appeal. Productive and dependable from April through November in both regular and fast spray programs in either greenhouse or cloth house. A clean vigorous habit that rarely overcrops or delays. Tolerates 56° minimum. Available May 12	Nov. 12	4.50
PN	**Illini Snowdrift.** A pure white feathery novelty pompon. We find it good from early April through its normal date in November. Best quality in May-June and again in early fall. Nice in pots, especially in spring. Flowers dye well. A novelty not to be grown in large quantities, but very attractive. Nice for Christmas on a 12-10 interruption	Nov. 12	3.65

WHITETOP

Comparatively a newcomer in the 10-week white pompon class, Whitetop is already one of the top two or three. Excellent in the greenhouse, both spring and fall, fine in the cloth house and in Florida. Excellent shipper. Not at home under midsummer greenhouse conditions in our experience. A good producer, and, by the way, not fussy on temperature during bud set. See page 20.

ICEBERG

Already one of the top several white pomps on the list. Excellent in the spring, summer and fall greenhouse crop, very popular in Florida, much used in the northern cloth house. Long stemmed, good producer, and noted for its ability to stand summer heat. Listed below.

WHITE POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	**11-Week Varieties**—Pinch August 5	Normal Flowering Date	Price 50 Only
	White Taffeta.	Pure white sport of Taffeta. Fine late cloth house pompon. Greenhouse April 1-June 1 and early fall. Best of the Taffeta group	Nov. 15	$3.75
N	**Sculpture.**	Large ivory white daisy. Greenhouse (March 1-May 31 and September 15-November 30). Cloth house	Nov. 15	3.90
D	**White Norma.**	Large anemone, white rays and yellow cushion. Excellent disbud (November 15-April 15)	Nov. 15	4.00
	White Freida.	Large, white anemone, good disbudded or sprays	Nov. 15	3.50
	Snowflurry.	White button pompon. Larger than Pinocchio. Requires 60° for bud initiation	Nov. 15	4.00
D	**Illini Starflower.**	Large semi-anemone spoon. Single. A novelty in white for retail growers. Disspray or disbud	Nov. 18	4.00
D	**Ermine** (NEW—Yoder Bros.).	Medium large ivory-white disbud. Cream-eyed centers. A winter Iceberg for the fast disbud program from November through April. Extremely tall on the regular schedule. Should be profitably efficient in any cool 60° environment. Available May 12	Nov. 20	4.50
	Greco's Carnation (NEW).	Medium large white pompon. Petals are finely serrated and form somewhat resembles a Carnation. Clear white 11-week pompons are scarce. Performs best under high light and cool finishing temperatures. Suited to late cloth house (September 15-October 31) and greenhouse programs (September 15-December 15). Valauble for natural Thanksgiving crop. Not suited to early spring programs	Nov. 20	4.25
	Seafoam.	Medium large, ivory white pompon	Nov. 20	4.00
DN	**Long Island Beauty.**	Large anemone. Yellow cushion. Disspray. Good fast disbud (November 15-April 15). Tolerates 56°	Nov. 20	3.75
N	**Highbrow.**	Ivory white decorative pompon. Very productive. Superb quality in the late cloth house (September 15-October 31) and in the greenhouse mid-September-January 1	Nov. 20	3.75
D	**Nevada.**	Medium large anemone. Chartreuse cushion. Fast disbuds March 1-April 30 and November 1-December 31	Nov. 20	3.90
	Priscilla.	Medium large, clear white pompon	Nov. 20	3.75

WHITE POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
11-Week Varieties—Continued		
Illini Bountiful. Small ivory pompon	Nov. 23	$4.15
Crystal Beauty. Medium large pompon	Nov. 23	4.15
N **Paramount.** Medium large ivory white formal pompon. Heavily used in northern greenhouse flowering from October through December or even all winter in near south, Colorado, etc. Fair producer, vigorous dependable grower and a top quality flower. Good for late cloth house. Not recommended for pinched crop	Nov. 23	3.65
Surfside (NEW—Yoder Bros.). Large daisy. A clear white. Extra wide petals and green discs. Petallage has substantially more substance than found in either Illini Alba or Sculpture. A splendid co-partner to such varieties as Jubilation, Crackerjack and the Galaxies to be flowered from November through March. Tolerates 56° minimum. Available May 12.	Nov. 23	4.50
DN **Belray.** Large white formal pompon. Tall grower and one of the best large whites for spring flowering in the greenhouse (March 15-April 30), and again October 1-November 15. Heavily used in Florida (January 1-early March). Good northern cloth house variety October 1-31. Remove center buds. Will set bud at 52°, development slowed by high temperatures. Excellent fast disbud March 1-April 30 and November-December	Nov. 24	3.50
Carrara. Medium large, pure white decorative. A short growing variety that tolerates low temperatures. Bud development is retarded by high temperatures. Recommended March 1-April 15 and October 15-December 31	Nov. 24	3.90
12-Week Varieties—Pinch August 10		
White Princess (NEW—Coward). Pure white button. Sport from Princess. Hard and very durable. Requires high temperature for maximum initiation of buds. Tolerates a wide range of temperature for development. Well suited to the late cloth house (September 15-October 31) and greenhouse October 1-November 30	Nov. 25	3.75
White Yuletide. Medium decorative pompon, pure white	Nov. 25	3.50
Silvercrest. Small white formal pompon. Markedly improves the appearance and quality of Snowcrest. Sprays October 15-December 31 and cloth house mid-September-November 1.	Nov. 25	3.90
DN **White Lady.** White sport of Beautiful Lady. Disbud. Short and adaptive to fall and winter pots.	Nov. 25	4.00
Illini Peace. A productive white anemone for Thanksgiving. Spray pomp October 15-December 31.	Nov. 25	4.00
D **Champ** (NEW). Large white disbud anemone. Growth is clean and vigorous. Larger than Illini Glacier, approaching the size of White Supreme. Response is uniform and production high. Fast disbud programs October 1-April 30. Cushion is large and develops well, acquires a chartreuse green overtone. Provides outstanding winter disbuds	Nov. 28	4.25
DN **White Valencia.** Giant, showy (5 to 6 inches) daisy. Available in a wide range of colors. At their best flowered normal season, 60° till bud set then finished cool with good light and generous space. We have had good success with them late March-May 1 under glass. Disbud to one flower per stem	Nov. 28	3.90
Cordova. Medium large pompon. Natural season	Nov. 30	3.90
Fortune. Formal white pompon. An outstanding quality flower. Sprays November 1-January 1 and cloth house (October)	Dec. 1	3.65
Illini Glacier. Medium large anemone. Clear white with white cushion. Spray pompon March 1-April 30 and October 1-December 31. A fast disbud October 1-April 30. Improves Long Island. Requires 60° initiation and cool finish	Dec. 1	3.90
Monarch. Large ivory white decorative	Dec. 1	4.15
13-Week Varieties—Pinch August 15		
Cameo. Medium large ivory decorative. Natural season	Dec. 5	3.90
DN **White Enchantress.** Large disbud and disspray anemone. Color requires high light intensity and 60° temperatures. Under cooler finishes it is a smooth shell pink. Sport of Enchantress. November 15-January 1. Disbud and spray pompon	Dec. 5	3.90
N **Acclaim.** Medium large, formal white with slight cream cast. A top-notch winter white. It is excellent under glass from December 1 through March (very best March 1-April 15). Sets buds well even at marginal temperature. If given ample time (plant to flower), it will produce well and form good sprays. Fine at normal season	Dec. 5	3.40
Spangles. Small white pompon. A late white Sunnyside	Dec. 5	3.90
Cotillion. Medium large, semi-formal pompon. Requires 60°	Dec. 5	4.15
Snowstorm (NEW—Yoder Bros.). A white decorative pompon of medium size. Represents continued advancement to improve quality, productiveness and low temperature tolerance for northern winter pompon programs. Specifically recommended in greenhouse spray programs from December through mid-March. Flower size benefited materially when partially dissprayed. Snowstorm's ease of flowering will commence to decrease the popularity of Silversmith. Fully tolerant to cool 60° environment. Available May 12	Dec. 5	4.50

WHITE POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

Variety and Description	Normal Flowering Date	Price 50 Only
13-Week Varieties—Continued		
N **Illini Alba.** University of Illinois medium large, chalk white daisy. Devoid of tendency to pink. Best described as a white Debutante. Alba will tolerate 56° for initiation and development. Response dependable through mid-March.	Dec. 5	$4.25
Northwind (NEW—Yoder Bros.). Medium to large pure white single. Represents a decided improvement in vigor and productive capacity among the presently available white singles for winter production in the North. Durable flowers enable it to be shipped without difficulty. Extremely reliable in cool 60° program. Useful in the regular greenhouse spray program from December through February. Available May 12.	Dec. 8	4.50
N **Orway.** Large white daisy. An improvement over Yukon in flower quality and growth habit.	Dec. 8	4.15
Snowdrop. White button pompon. Pink tinges at low temperatures.	Dec. 8	4.15
White Snowdrop. Pure white sport of Snowdrop. Does not pink. Spray pompon November 15-March 15	Dec. 8	3.90
Illini Starlet. Medium large white anemone. Improves Garza in form, growth, and clarity of color. Spray program December 1-December 31.	Dec. 10	3.90
D **Improved White Supreme.** Large anemone. Tall disbud. Finish cool.	Dec. 10	4.00
Yukon. Medium large, chalk white single. Tolerates 56°. Spray pompon November 15-March 15.	Dec. 10	4.00
Icecap (NEW). Medium large, chalk white formal pompon. Based on trials we saw of this last winter at Yoders', Icecap promises to be a first class, pure white winter pompon and it appears to be remarkably free of the tendency "to stall" or simply fail to develop its buds, so much a problem with nearly all winter pompons. In other words, it is capable of developing its buds in a wider temperature range than the other 13 and 14-week winter pomps. Very vigorous, productive and quite attractive flower. No pinking. Will initiate and develop at 56°, although equally valuable at 60°. Because of extra vigor, it can be grown as a 14-week variety. Greenhouse programs Nov.-March.	Dec. 10	4.25
Snow Queen. Medium large, formal white pompon.	Dec. 10	3.90
Satellite. Medium large cream white pompon. Very tolerant of cool 60°. Spray pompons November 15-March 15.	Dec. 13	3.90
Dolomite. Medium large clear white pompon. Smaller, later version of Carrara. Taller and more vigorous. Spray pompons November 15-December 31. Tolerates 56°.	Dec. 13	4.00
N **Snowcrest.** Small pompon. Distinctive green eye. Uniform and reliable in 60° crops. Spray pompons December 1-March 15.	Dec. 13	3.75
14-Week Varieties—Pinch August 23		
Trenton. Good form and substance. A medium large pompon for natural flowering.	Dec. 15	3.90
N **Silversmith.** Glistening white showy decorative. One of the two top white pompons for the winter greenhouse crop. Will set bud and develop best at 60°. Given correct temperatures, will produce up to one bunch per foot in winter. Used late December-March 1. Remove center bud. Fine at natural season.	Dec. 15	3.50
N **Snowcap.** Large formal pompon. When grown at 60° minimum night temperature, this is one of the outstanding pompons available for winter spray programs. December 1-February 28. Pinks at low temperatures.	Dec. 15	3.75
N **Garza.** Medium large white anemone. Important for normal season flowering.	Dec. 15	3.75
White Riviera. Medium large, ivory white decorative. Spray programs December-February. Must have 60° initiation and cool finish.	Dec. 15	4.15
Elegance (NEW). Medium, large, white decorative. Excellent for December-early January period. Produces larger flowers than Silversmith in addition to being more sharply responsive in 60° programs. Flowers naturally for Christmas. Tends to become too short and clubby in late January and February.	Dec. 20	4.25
Heirloom. Medium large decorative.	Dec. 20	4.00
Wedding Bells. Small to medium white formal pompon. Purer white than Snowcrest. Uniform and productive in natural season.	Dec. 20	4.00
Imp. White Kramer. A West Coast variety used very extensively in California. Good shipper and producer; large decorative pompon. A definite improvement over White Kramer.	Dec. 20	4.25
15-Week Varieties—Pinch September 1		
N **Revelation.** A medium large decorative white. Fine for the late December-January normal crop. Must be held at 50° or at the most 55° after buds appear or it will stall. Can be held easily for the early January market without lights.	Dec. 25	3.65

WHITE POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
15-Week Varieties—Continued		
N **Snow.** Medium large pompon for late normal flowering. Needs 60° to set bud. Although still much used, the trend is toward Revelation and Silversmith, mainly because they set buds at somewhat lower temperatures	Dec. 25	$3.65
Talmeda. Medium large white pompon. Improves Revelation. Just about the latest white pompon. Good form and substance	Jan. 5	3.75
Illini Cascade. Large clear white decorative. Finishes well at high 60°, or low 50°. Spray programs December 1-February 28. Winter disbud	Jan. 5	3.75
Illini Snowbound. Large informal white decorative with cream center. Requires 60° initiation and 50° development	Jan. 5	3.90

YELLOW POMPONS

A Complete List of Garden (Hardy) Varieties on Page 44

7-Week Varieties

PN **Yel. Chris. Columbus.** The number one variety for May flowering in 3 inch pots. Will set buds without shade or lights in May. Medium large, lemon yellow decorative. Short treatment April 1-June 15 and September 1-October 15	Oct. 1	3.65
P **Moonlight.** Medium large, sulfur yellow pompon. Short, compact growth habit. For borders and pot plants. Medium treatment pot plant April 1-June 15 and September 1-October 15.	Oct. 1	4.15
Polaris. An early golden buff daisy. An Arctic hybrid. Background garden variety and October cut flower	Oct. 5	4.15
P **Astoria.** Medium large, bright lemon yellow pompon. More prolific than Yellow Chris. Columbus. Medium treatment pot plant April 1-June 15 and September 1-October 15.	Oct. 5	4.00
Chas. Nye. Large deep yellow pompon. Showy, prolific garden variety. Very popular	Oct. 5	4.00
P **Chiquita.** Small deep lemon yellow button pompon. An intermediate garden variety. Medium treatment pot plant April 1-June 15 and September 1-October 15	Oct. 5	4.00
P **Yellow Spoon.** Medium large light yellow spoon single. For garden and pot culture. Showy and artistic.	Oct. 5	4.00
Lee Powell. Large, golden yellow decorative. Vigorous background and cut flower variety.	Oct. 10	4.15
N **Goldrush.** Dark yellow daisy. Cut flower variety	Oct. 10	4.15
Treasure. Small deep yellow pompon. Vigorous, upright habit for outdoor cut flowers and natural greenhouse crops. Also for cloth house July 1-31	Oct. 10	4.00
N **Bright Forecast.** Very formal yellow pompon. Outsanding flower quality. Background for gardens and outdoor cut flowers	Oct. 10	3.90

8-Week Varieties—Pinch July 10

Sarasota. Bright lemon pompon produced on good stems with excellent spray formation, for cutting either under glass or outside throughout the South. Also good in the early cloth house.	Oct. 15	4.00
Yellow Irene. Small button pompon, light lemon	Oct. 15	4.15
Rodell Imp. Small button pompon, productive, light lemon	Oct. 20	3.65
Topflight (NEW—Yoder Bros.). Medium to small bright yellow anemone. Flowers are borne in abundant masses on both terminal and compound sprays, each floret displaying well-defined cushions without reflexing ray petals. May through October. Tolerates 52° bud initiation temperatures and high summer temperatures for development. A needed supplement in the present shortage of 8-week yellow pompons for cut flower use. Available May 12.	Oct. 20	4.50

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Note carefully instructions for ordering on page 8. No orders for less than 50 rooted cuttings of a variety accepted. Minimum total order, 500 cuttings.

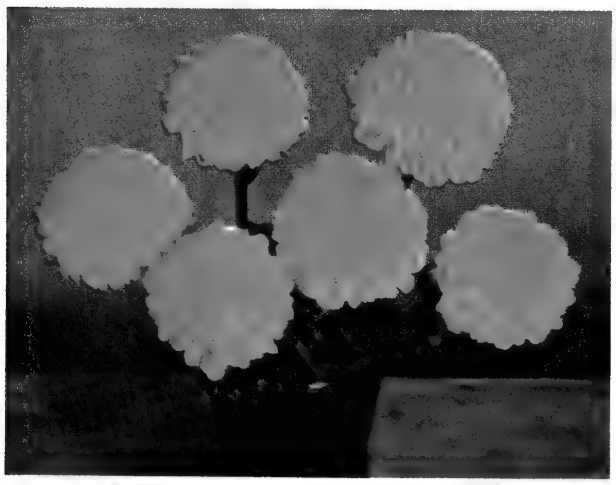
50 only	$3.15	$3.25	$3.40	$3.50	$3.65	$3.75	$3.90	$4.00	$4.15	$4.25	$4.50
100-250 per 100	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.75
300-450 per 100	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.50
500-950 per 100	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.25
1000-up per 100	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	8.00

YELLOW POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	9-Week Varieties—Pinch July 16		
	Goldfinch. Small golden yellow button pompon for greenhouse May-June and September-October.	Oct. 25	$4.15
D	**Starlight.** Large yellow daisy. Recommended in the greenhouse April 15-October 31 except during high temperature.	Oct. 25	4.15
DN	**Golden Herald.** Large decorative. Tolerates 56°. Greenhouse spray pompon or disbud April 15-October 31. Cloth house July 15-September 15.	Oct. 25	3.65
DN	**Gold Coast.** Bright yellow formal pompon of medium size. One of the top 2 or 3 yellow pompons for the greenhouse (May 1-November 1) and for the August-September cloth house. It sets bud easily, produces well, rates only fair in hot weather (petals stick and it produces too many flowers per spray). Suggest disbudding sprays. Excellent at normal season. Tolerates 56°. Important in the Florida winter crop.	Oct. 25	3.40
	Early Yellow Daisy. Medium large yellow single. Selection from California Yellow Daisy that will mature 7 to 10 days earlier.	Oct. 25	4.15
	Red Dot. Bright yellow pompon with bronze red center. Recommended for September through October 15 cloth house and normal, March through May in spring.	Oct. 25	3.75
	Yellow Dot. Small pompon. Two-tone with golden bronze eye.	Oct. 25	4.00
	Canary Dot (NEW—Neal). Bright yellow pompon without the red center.	Oct. 25	3.75
	Happiness (NEW). Large golden yellow single. Reliable at high summer temperatures. Cloth house July 15-October 31, greenhouse May 1-October 31. Tolerates 56°.	Oct. 28	4.00
	Sunup. Small deep yellow pompon. At its best July 1-September 15 under glass, cloth house August 1-September 30.	Oct. 28	3.90
	Yellow Arcadia. Medium large lemon pompon.	Oct. 28	4.00
N	**Sauterne.** Medium large intense yellow daisy. Recommended in greenhouses May 1-October 31, and cloth house August 1-September 30.	Oct. 30	3.75
D	**Gondola.** Medium large yellow daisy. Large flower, similar to Starbright. Greenhouse May 1-October 31.	Oct. 30	4.00
	Brilliancy (NEW—Yoder Bros.). An Aztec yellow, intermediate single. Recognized for rigid stems, a well balanced spray formation. Grow as a natural spray in greenhouse from May through mid-November. A daisy of substance with distinctive class and productive capacity. Available May 12.	Nov. 1	4.50
	Yellow Halo. Sport of Halo. Medium single, deep lemon yellow. Tolerates 56°. Greenhouse May 1-October 31.	Nov. 1	3.90
	Schn. Yellow Daisy. Medium large, bright yellow daisy.	Nov. 1	3.90
	Dandy. Medium large yellow pompon. Will initiate buds at 56°. Develops better than Sunup at high temperatures. Production of Gold Coast.	Nov. 1	4.00



YELLOW IGLOO

Same reliable behavior as its parent, Igloo. This new sport is assured of a place among 10 week yellow pomps.

YELLOW BEAUREGARD

Fine clear golden yellow at all temperatures. Same reliable bud-set and production as its parent, Beauregard. Especially fine for mid-summer greenhouse crop.

JEALOUSY

Heavy producing, very attractive bright yellow pompon with green eye. Fine in the greenhouse spring and fall, and excellent under cloth. Listed on page 28.

YELLOW ICEBERG

Like its parent, Iceberg, it's outstanding in the greenhouse crop, spring, summer and fall and in Florida through the winter season. Long stemmed, good producer, and in our experience, will still produce a crop in the midsummer greenhouse where other varieties stall badly. Listed below.

YELLOW POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
9-Week Varieties—Continued		
Statesman. Small intense yellow pompon. A yellow Pinocchio, but a better producer. Also does well in the summer greenhouse. Greenhouse spray program May 1-October 31. Cloth house July 15-October 31. Tolerates 56°	Nov. 1	**$4.00**
D Yellow Doty. Large, deep bronzy yellow pompon. Disbud	Nov. 1	**4.15**
N Starbright. Large, deep lemon single. Greenhouse spray program April 15-November 15 except in hot weather	Nov. 1	**3.90**
Yellow Daisy. Medium large, lemon yellow daisy	Nov. 1	**4.00**
Yellow Sea Gull. Medium large, deep lemon pompon	Nov. 1	**4.15**
P Sunray. Small anemone pompon. Productive and responsive. Tolerates 56°. Pots (short treatment) April 1-October 31	Nov. 3	**3.75**
Honeymoon. Large yellow daisy. Good form and clear yellow color. Spray program May 1-November 15. Cloth house July 15-October 31	Nov. 4	**4.00**
10-Week Varieties—Pinch July 22		
Barcarole. Medium large lemon pompon	Nov. 5	**3.90**
Yellowtop. Bright lemon yellow sport from Whitetop. Same habit and vigor. Achieves maximum value in cloth house programs (August 1-October 31), in greenhouse late April-May, and in early fall	Nov. 5	**4.00**
Sunfire (NEW—Yoder Bros.). Medium to large single. Dark yellow. Wide horizontally flat petals are well extended and become partially tubed at their base. A top performer in either fast or regular spray programs from May through mid-November. The combination of Sunfire's improved traits enables it to compete favorably with the present varieties of Happiness, Souterne, and Aztec. Available May 12	Nov. 5	**4.50**
N Yellow Beauregard. Medium large, golden yellow pompon. Has the many good qualities of its parent, Orange Beauregard. Best in the greenhouse May-November, especially at warmer temperatures. Fine in cloth house. Removal of center bud helps overcome tendency to tight spray. Tolerates 56°. See photo, opposite page	Nov. 5	**3.65**
D Yellow Iceberg (NEW). Clear lemon yellow sport from Iceberg. Identical to parent variety except for color. Excellent in the greenhouse crop, spring through fall, especially valuable for high temperature periods. Removal of center bud improves spray. Excellent fast disbud year round. Cloth house August 1-October 31. Good winter variety in Florida. Tolerates 56°. Pictured above	Nov. 5	**3.75**

YELLOW POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds
N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	10-Week Varieties—Continued		
	Brigadoon. Heavily petalled, golden yellow daisy	Nov. 5	$4.15
N	**Aztec.** Medium, deep yellow daisy. Greenhouse program April 1-June 30 and September 15-October 31. Tolerates 52°	Nov. 5	3.75
N	**Mary Hall.** Medium large, deep lemon pompon. Stands high temperatures well. Greenhouse spray program May 1-November 15. Cloth house July 15-September 30. Used in Florida winter crop. Tolerates 56° for bud initiation	Nov. 5	3.65
D	**Crescendo.** Large yellow pompon. Outstanding variety for high temperature periods. Greenhouse July 1-September 15. Tall. Tinges bronze at low temperature. Cloth house August 1-September 30.	Nov. 5	3.65
	Constellation. Medium large, decorative pompon. Brilliant yellow. Needs one additional week of long days for good stem length. Excellent at normal season	Nov. 5	3.90
	Nuggets. Small pompon. Productive button	Nov. 5	4.15
D	**Luxury.** Large decorative. Clear yellow when flowered at high temperature, otherwise an attractive golden amber. At its best as a disbud in summer but good for May through October. Spray pompon May through October, disbudding improves it	Nov. 8	3.75
D	**Daybreak** (NEW—Yoder Bros.). A bright and lustrous orange anemone disbud. Attains 4-5 inch diameters. A uniquely different and tasteful color for fast disbud programs from late March through mid-November. Color remains smooth under high temperature finishes although intensity may be reduced. A true designer's delight. Available May 12	Nov. 10	4.50
DN	**Yellow Shasta.** Very attractive lemon yellow anemone. For spring through normal season in the greenhouse and cloth house, also disbud. Very reliable "bread-and-butter" yellow pompon; one of the top two or three on the list. More details on Shasta varieties under White Shasta.	Nov. 10	3.40
D	**Cream Shasta.** Beautiful cream color addition to the Shasta group. Tolerates 56°. Same flowering periods as Yellow Shasta	Nov. 10	3.90
	Jealousy. Small pompon. Intense yellow; bright green eye. Hard, ball type. Durable, prolific and dependable. Spray programs. Cloth house. Valuable supplement to Gold Coast. Will develop green bracts under extreme heat. See photo, page 27	Nov. 10	3.65
	Yellow Igloo. Medium large, deep yellow pompon. Sport of Illini Igloo with same habit and temperature tolerance. Tolerates 56°. Spray pompon April 1-November 15, cloth house mid-July through October. See photo, page 26	Nov. 10	3.65
	Heyday. Medium large, bright yellow pompon. Will initiate and develop its buds well at 56°. Improves the flower size and productiveness of Yellow Beauregard. Greenhouse program April through June and September-Thanksgiving. Cloth house August through October	Nov. 10	4.00
	Illini Gold Cup. Large pompon, buttercup yellow	Nov. 10	3.75
P	**Yellow Pacesetter.** Lemon yellow sport from Pacesetter. Shapes up well in pot programs (tall treatment) October through June. Greenhouse pompon late April-May and in the fall.	Nov. 10	4.00
P	**Yel. Ill. Snowdrift** (NEW—Weigold). Small novelty decorative. Intense yellow sport of Illini Snowdrift. Petals are narrower, and more finely feathered. Slightly less vigorous during marginal light periods, but equally as good during its recommended period. Natural greenhouse spray program from mid-April through mid-November. Natural spray, pinched pots for the same period using tall treatment. It's cute! It's different! Available May 12	Nov. 12	4.50
	Fanfare (NEW—Yoder Bros.). Golden-yellow intermediate anemone for natural spray pompons. A late 10-week responding variety that performs amazingly well during the same period that Crescendo is flowered. Spray programs from May through mid-November. Because of extreme inherent vigor, one long day week can be dropped from the 10-week regular schedule. Finishing temperature less than 60° induces bronze tinges. A fine asset to the list of suitable summer and high temperature flowering pompons. Available May 12.	Nov. 14	4.50
	11-Week Varieties—Pinch August 5		
	Souvenir (NEW). Medium large, dark yellow daisy with early 11-week response. Supplement to Yellow Sculpture. Greenhouse programs late September-May 15	Nov. 15	4.25
	Yellow Sculpture. Lemon yellow daisy. Sport of Sculpture. Greenhouse February through May and September-Thanksgiving. Cloth house late September-October	Nov. 15	3.90
	Princeton. Medium, large, golden decorative	Nov. 15	4.00
N	**Golden Chord.** Medium to large, intense golden yellow pompon. Excellent under glass October 1 through December and under cloth late September-October. Requires 60° for initiation. Very fine for late cloth house	Nov. 15	3.65
N	**Forty-Niner.** An exceptionally fine, golden yellow pompon. It is used extensively in the cloth house from early September on, and is good also under glass from October 1-December 1 in our experience. Especially recommended for the late cloth house season. Also needs full 60° for bud set. Used in the Florida winter crop	Nov. 15	3.40

YELLOW POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
11-Week Varieties—Continued		
Esquire (NEW). Medium large, deep yellow decorative. Larger than Yellow Highbrow. Tolerates 56° for bud initiation. Its value to the 11-week period lies in its dependability within a wide range of temperatures. Greenhouse mid-September to mid-May	Nov. 15	$4.25
Gold Ball. Medium large golden yellow pompon. Temperature tolerance improves Golden Chord. Hard, durable. Size of Corsair. Outstanding in cloth house late September-October and greenhouse spray program mid-March-May and September-Thanksgiving	Nov. 15	3.75
Yellow Taffeta (NEW—Coward). Medium lemon-yellow sport from Taffeta. Depth of color varies slightly with light intensity. A variety worthy of consideration as an addition to the rest of the Taffeta group when flowering in greenhouse spray programs from March through May and from mid-September through November. Available May 12	Nov. 15	4.50
Illini Goldilocks. Medium large, golden decorative. Tall and vigorous. Requires high light intensity for maximum production. Fine decorative in late cloth house. Greenhouse mid-September-mid-November. Requires 60° or less to develop its flower buds	Nov. 15	3.75
Susanne Miller. Large anemone. Deep yellow cushion. Disbuds late November-March. Norma sport. Tolerates 56°	Nov. 15	4.00
P **Illini Bonbon** (NEW—Univ. of Ill.). Very small dark yellow anemone. Short growth habit. Dainty individual flowers develop perfect well-rounded cushions and are borne in massive clusters. Exclusively for pots from March through June and October through December. Medium or tall treatment. High temperatures stall flower development. Available May 12	Nov. 18	4.50
Etude. (NEW—Yoder Bros.) Large semi-formal pompon. A rich yellow. Represents continued improvement in productive vigor and late winter and early spring response dependability. Performs well on either the regular or fast spray schedules from March through May and mid-September through December. Rightfully described as the "Corsair" of the 11 week yellows. Durable for cloth house use. Available May 12	Nov. 20	4.50
DN **Yellow L. I. Beauty.** Large lemon anemone. Disbud and disspray. Fast disbud program, mid-November to mid-April	Nov. 20	3.90
N **Yellow Highbrow.** Sport of Highbrow. Medium golden yellow pompon, identical in habit with Highbrow. Requires 60° for initiation. Excellent production. Spray pompon mid-September to December. Cloth house mid-September to October	Nov. 20	3.75
N **Lollipop.** Lemon yellow pompon. Very formal, round and hard. Has a long season of usefulness. Fast, reliable response and good production. Greenhouse crop mid-March to April and mid-September-December. Cloth house mid-September to October, and Florida winter crop	Nov. 20	3.50
Pippin. Medium large, yellow pompon. Produces heavily, many flowers on each spray. Greenhouse program mid-March to April and mid-September to Thanksgiving. Cloth house mid-September to October	Nov. 20	3.75
Klondike. Orange yellow pompon. Cloth house from mid-September to October. Greenhouse mid-September to Thanksgiving. Give one additional long day week to add height. Disspray.	Nov. 20	3.75
N **Bojangles.** Yellow daisy. Intense color, heavy petalage	Nov. 20	4.15
D **Yellow Nevada.** Medium large, light lemon anemone. Fast disbuds spring and fall	Nov. 20	4.00
D **Illini Sunspot.** Large yellow pompon. Responds well to disbudding. Greenhouse Sept.-Nov.	Nov. 20	3.90
D **Sultan.** Large formal decorative. Golden yellow to amber at low temperatures. A large Orange Beauregard. Disbud and spray pompon. March-May and September-November	Nov. 22	4.00
Yellow Paramount. Deep yellow sport of Paramount. Greenhouse programs March-April and late October-December. Important for Thanksgiving. Best grown single stem	Nov. 23	3.75
P **Yellow Rolinda.** Medium anemone; good pot normal. Buff yellow	Nov. 23	3.75
12-Week Varieties—Pinch August 10		
Goldenrod. Full round and solid light yellow pompon	Nov. 25	3.90
Illini Gold. Small golden yellow pompon	Nov. 25	4.15
N **Goldsmith.** Large golden yellow decorative. Spray pompon mid-October to April 30. Requires 60° for initiation. Cloth house October only	Nov. 25	3.75
Highlander. Medium large intense yellow decorative. Spray pompon mid-October to December.	Nov. 25	3.75
N **Sunnyside.** Medium large deep lemon pompon. Fine Thanksgiving variety	Nov. 25	3.65
Illini Wampum. Beautiful, bright yellow anemone with greenish yellow cushion. A good addition to the late winter and early spring program. Spray pompon March 1-April and October-December. Cloth house October only	Nov. 25	4.00
DN **Yellow Valencia.** A sport formerly known as Golden Jane. Best vigor and form of Valencia family. Disbud and spray pompon November 15-December	Nov. 28	3.90
Yellow Cordova. Medium deep lemon pompon	Nov. 30	4.15
Yellow Fortune. Deep yellow sport of Fortune. Greenhouse spray pompon November-December. Cloth house October only	Dec. 1	3.90
N **Omega.** Medium large, deep lemon pompon. Very productive. Greenhouse spray pompon October-April. Cloth house October only. Best in warm 60° crops	Dec. 1	3.65
N **Yellow Galaxy.** Sport of Galaxy. Deep lemon yellow. Fine for fall, winter and early spring.	Dec. 1	3.75

YELLOW POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	13-Week Varieties—Pinch August 15		
	Coronation (NEW). Medium to large, intense golden yellow pompon. Trials of this observed last winter showed a remarkable ability to flower over a rather wide range of temperatures. We believe this variety will be very much less inclined to the "winter stall" problem that has been so prevalent among winter pomps in recent years. Capable of developing buds over a wider range of temperatures than such varieties as Corsair, Sun Valley, and Golden Anniversary. Larger, more beautiful flower than Corsair. Sprays open. Improved by removal of center bud. Will initiate and develop buds at 56°. Provides fine 3-4" disbuds in winter fast programs. Greenhouse spray program November 15-March 15	Dec. 5	$4.25
	Jackpot. Large golden yellow decorative. Spray pompon improved by disbudding. Must have 60° initiation temperatures	Dec. 5	4.00
	Yellow Acclaim. Yellow sport from acclaim. See notes under Acclaim	Dec. 5	3.75
	Golden Acclaim. Medium large, golden yellow pompon. Selection from Acclaim. Deeper more intense color than Yellow Acclaim. Tolerates cool 60° well. Spray programs November 15-March 15. See notes under Acclaim	Dec. 5	3.75
	Yellow Cameo. Medium large lemon decorative. Vigorous and productive in natural season	Dec. 5	4.15
	Dark Yellow Cameo. A deep yellow selection from Yellow Cameo	Dec. 5	4.00
D	**Yellow Enchantress.** Large disbud and spray anemone. Best yellow color requires high light and high temperature conditions. Disbud November 15-December	Dec. 5	3.90
	Cinderella. Medium large, deep golden yellow single. Spray program November 15-March 15	Dec. 5	4.00
	Dark Yellow Satellite (NEW). Dark yellow sport from Yellow Satellite. Crisp, formal pompon of fine response in 60° winter programs November 15-March 15	Dec. 10	3.75
DN	**Imp. Yellow Supreme.** Large anemone. Disbud. Tall	Dec. 10	4.00
N	**Corsair.** Fine, bold, medium large, golden yellow pompon. Remains the number one winter yellow, both for normal flowering and for December-March "year round" crop. It will flower well at a cool 60°, but if grown much above or below that it will stall badly. Buds simply fail to develop. Heavy producer	Dec. 12	3.50
	Yellow Snowcrest. A clear yellow sport. Bright green eye. Sprays pompon December-March 15.	Dec. 13	3.90
	14-Week Varieties—Pinch August 23		
	Illini Brighteyes (NEW). Medium large anemone. Lemon yellow ray, dark yellow cushion petals. Petioles are stiff, stems wiry and strong. Requires 60° for uniform initiation. Tolerates 60° or less for development. Production is average. Quality high. Spray programs December-February	Dec. 15	4.25
	Yellow Riviera. Medium large decorative. Initiates at 60°. Finish cool. Dec.-Feb.	Dec. 15	4.15
N	**Yellow Garza.** Medium large anemone. Lemon	Dec. 15	3.90
N	**Shamrock.** Large decorative. Disspray programs December-February	Dec. 15	3.75
	December Gold. Large deep golden yellow pompon	Dec. 15	4.00
	Golden Elegance (NEW). Medium large lemon yellow decorative. A sport from Elegance and identical except for color. Very responsive and tolerant to 60° initiation and development. Medium height and vigor. Matures naturally for Christmas. Spray program December 1-January 1, but too short and lacking in vigor for January, February and March	Dec. 20	4.25
	Sun Valley (NEW). Medium to large, intense golden pompon with striking green eye. Strong grower with heavy production. Requires 60° for initiation and tolerates 60° programs well, but has same tolerance of temperature extremes as Corsair. Normally a week later than Corsair. Late January and February crops require same warm 60° as Corsair. Spray program December 1-February 28	Dec. 20	4.25
N	**Vibrant.** Medium large, deep lemon decorative. Disbud and spray programs December	Dec. 20	3.65
N	**Sunrise.** A yellow pompon best described as a late Gold Coast. Sunrise is not sensitive to low night temperatures	Dec. 20	3.75
	Imp. Yel. Kramer. Large decorative; good shipper, used extensively on the West Coast. Darker sport of Yel. Kramer	Dec. 20	4.25
	Golden Anniversary. Small intense yellow pompon	Dec. 24	4.00
	15-Week Varieties—Pinch September 1		
	Yellow Revelation. Medium pompon, good producer lemon yellow	Dec. 25	3.65
N	**Siren.** A deep yellow decorative. Smaller than Vibrant, but very similar to it; flowers later	Dec. 25	3.75
	Yuleflame. Large decorative. Deep lemon	Dec. 25	3.75
N	**Yellow Snow.** Medium large pompon	Dec. 25	3.75
	Golden Snowbound. Medium golden yellow decorative. Color intensification of Illini Yellow Snowbound. Recommended for natural flowering only. 60° initiation; 50° development	Jan. 5	4.00
	Illini Yellow Snowbound. Yellow sport of Snowbound. Requires 60° for initiation and 50° for development	Jan. 5	4.00

PINK POMPONS

A Complete List of Garden (Hardy) Varieties on Page 46

Variety and Description	Normal Flowering Date	Price 50 Only
7-Week Varieties		
PN **Spellbound.** Medium large decorative pompon. Excellent for spring and fall pot culture (medium treatment). Very pleasing lavender pink. One of the top two or three pink garden varieties for spring "no light, no shade" flowering	Oct. 1	$3.65
P **Mischief.** Small daisy. Dark purple with contrasting yellow center, produced abundantly on short globose plant. A colorful novelty that lends itself to spring and fall pot plants (medium treatment). Tolerates 56°	Oct. 10	3.90
PN **Joybringer.** Salmon rose pompon. For borders and pot culture (short treatment) April 1-June 15 and September 1-October 15. Spreads well. Short and compact	Oct. 10	3.90
P **Alert.** Medium large, intense purple decorative. An impressive color for spring and early fall pot plants (medium treatment) April to mid-June and September to mid-October. This is the Humdinger of the garden varieties	Oct. 14	3.75
P **Fuchsia Fairy.** Small light pink decorative. Compact, globose growth habit, similar to Cushion varieties. Spring and fall pot plants (medium treatment). Tolerates 56°	Oct. 14	4.15
8-Week Varieties—Pinch July 10		
P **Candytuft** (NEW—Yoder Bros.). Lavender-pink button pompon. Produces a great mass of small durable blooms, either as an early spring pot plant from May through June and October with medium treatments, or as a natural flowering garden specimen. Available May 12.	Oct. 15	4.50
P **Cupid.** Small pink decorative. Unique dahlia form. Prolific. Dwarf, masses and spreads as a garden variety. Disbud for pot plants (short treatment). Spring and early fall	Oct. 15	4.15
P **Mayfair.** Medium large smooth pink daisy. For cut in the greenhouse. Outstanding production. May 1 to mid-July and October 1-15	Oct. 15	4.15
P **Citation.** Medium large mauve pink pompon. A pot plant disbud (medium treatment) April to mid-June and September-October. One of the best late garden varieties. Tolerates 56°	Oct. 15	4.15
P **Enterprise.** Medium large deep pink pompon. Excellent substance. Outdoor cut flower. Cloth house July 15-August 15. Greenhouse May-early July and October	Oct. 15	4.15
P **Elizabeth Hood.** Large light orchid pink pompon. Garden backgrounds	Oct. 15	4.00
N **Jewell.** Small formal pompon. Lavender pink, short and productive	Oct. 15	4.00
N **Mirth.** Medium large pink daisy. Especially valuable in spring flowering (April 15-October 15). Durable and uniform response in cloth house mid-July to mid-October	Oct. 20	3.90
N **Carolyn Yosick.** Medium large lavender pink pompon	Oct. 20	3.90
Capt. Cook. Medium pompon, responds well to shading, deep rose	Oct. 23	4.00
Mary McArthur. Small deep coral pink pompon	Oct. 23	4.15
Prelude. Medium large coral pink daisy. Requires cool finish	Oct. 24	4.15
9-Week Varieties—Pinch July 16		
Jessie. Medium pompon, solid pink sport of Pink Dot. Light lavender	Oct. 25	3.75
P **Reveille.** Small pink pompon. Initiates and develops at 52°. Popcorn production. Requires low temperature finish. Shapely, for pots (medium treatment) April to mid-June and September-October. Spray pompon April-June 15 and October. Cloth house July only	Oct. 25	4.15
N **Pinkette.** Small dark pink pompon. Tolerates 56°. Greenhouse May 1-October	Oct. 25	3.90
PN **Ethrelda.** Medium large orchid pink anemone. Dwarf, breaks freely. High temperature color retention. Tolerates 56°. Disbudded pot plant year round (short treatment)	Oct. 25	4.00
Vogue. Large pink daisy. Beautiful form and substance. Spray pompon May-June and September 15-October. Cloth house September 15-October	Oct. 25	4.15
N **Reward.** A very productive deep pink daisy that holds color well. Tolerates 52°. Greenhouse May 1-October. Cloth house July 15-October	Oct. 25	3.75
Dark Reward (NEW—Neal). Dark sport of Reward—particularly useful under high temperature conditions	Oct. 25	4.50
N **Pink Dot.** Small pompon. Fine two-tone, pleasing pink with deep orchid eye. Most valuable in the cloth house late July-October and for Florida. Also used under glass May through October. Some growers space closer than average to improve production	Oct. 25	3.65
Gail. Small pink pompon. Selection from Pink Dot that displays an additional over-all color intensity. Cloth house July 15-October	Oct. 25	4.00
Betty Rose. Large light lavender pink anemone	Oct. 25	4.15
Wagonwheels (NEW—Yoder Bros.). Intermediate anemone. Silvery-coral reverse color as displayed by all completely tubular petals. A novel form representing a spoked wheel in appearance. Provides a uniquely different cut flower pompon in both fast and regular spray programs, from April through October. Color is best expressed in cool finishing temperatures. Suitable outdoor cut flower in the fall for either shaded or natural flowering. Available May 12	Oct. 25	4.50

PINK POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	9-Week Varieties—Continued		
D	**Thomas Johnson.** Large decorative. Deep orchid pink. Ideally suited to the fast disbud program (May-June and September 15-December 1). Develops exceptional stretch and heavy rigid stems. Individual flowers surpass the size of Portrait	Oct. 28	**$4.00**
DN	**Bluechip.** Medium large pleasing luminous pink decorative. Bluechip and Portrait are far and away the number one pink pompon in the 9-10 week group. Excellent under glass from early April through mid-November. Color lightens some in summer but remains very pleasing. Top-notch cloth house pink mid-July through October. Much used in Florida. Sets bud at 54°. Good production, reliable, uniform bud set. Excellent. See page 34	Nov. 1	**3.25**
DN	**Darkchip** (NEW—Krueger). Intermediate dark lavender pink sport of Bluechip. Color similar to that of Pennant but brighter. Can be flowered whenever Bluechip is grown. May through mid-November as a greenhouse spray. Like all the rest of the Bluechip sports, the color becomes enhancingly luminous under normal incandescent light. Available May 12	Nov. 1	**4.50**
DN	**Pinkchip.** Medium large decorative. A flattering light pink selection of Bluechip. Identical growth habit. Color resists fading. Can be grown whenever Bluechip is recommended. Greatest color difference is noted when finished at 60° or less. Greenhouse spray program May-November 15. Cloth house July 15-November 1. It tolerates 56°	Nov. 1	**4.00**
P	**Glamour** (NEW—Yoder Bros.). A formal pompon of intermediate size. Lavender pink with intensified centers. Spreading and stocky growth habit render it useful primarily as a pot plant variety from March through November. Medium treatment. Improves the breaking habit of Portrait and stem strength of Blue Ribbon. Available May 12	Nov. 1	**4.50**
	Dark Pink Buckingham. Medium large intensified pink daisy. Sport of Pink California Daisy. A West Coast cloth house variety	Nov. 1	**4.15**
P	**Handsome** (NEW—Yoder Bros.). Intermediate decorative pompon. Lavender pink. Color, size, and form bear a striking resemblance to Bluechip. Slightly large and more closely internoded foliage lends it to pot plants the year round. Tall treatment. Superb natural spray cut pompon from mid-April through mid-November. Is inherently as low temperature tolerant as Bluechip, 52° minimum, for bud initiation. Produces slightly smaller flowers but more of them. A highly versatile pompon. Available May 12	Nov. 1	**4.50**
D	**Lillian Doty.** Large light pink pompon. Disbud and spray disbud	Nov. 1	**4.00**
	Tempo. Medium large deep pink decorative. A 9 week Masterpiece. Recommended in the greenhouse (May to mid-November) and cloth house (September 15-October)	Nov. 3	**3.90**
	10-Week Varieties—Pinch July 22		
PD	**Mermaid.** (NEW—Yoder Bros.). Intermediate pompon disbud. Medium lavender pink with an intense tone on tone center contrast. A dwarf version of Portrait with decidedly better breaking action and spreading habit. Unfailing as a year round pot variety using short treatment. High temperature color retention equals that of Blue Ribbon. Fine foliage with smart, formal form. Available May 12	Nov. 5	**4.50**
	Parisienne. Medium large shell pink daisy. The color is as close to true pink as exists in mums. Spray pompons spring and fall	Nov. 5	**3.90**
	Delight. Medium large pink daisy. Productive, durable, striking color. Spray pompons April-June and mid-September to mid-November. Cloth house mid-July to October	Nov. 5	**3.75**
D	**Southdown Pink.** (NEW). Intermediate duplex disbud of Valencia size and form. Delicately shaded pink close to a true light pink Carnation. Wide, waxy petals. An accepted variety in Europe, possessing all the needed traits in the fast disbud program from October through mid-June. Tolerates 56° minimum temperatures. Develops equally as well during the summer periods, but 60° or lower is required for best color expression. Available May 12	Nov. 5	**4.50**
PDN	**Portrait.** Attractive medium large lavender pink pompon. Portrait and its partner, Bluechip, actually make up the majority of 9 and 10 week pink pompons grown in the northern greenhouse, cloth house, and in Florida. Portrait in the greenhouse crop tends to be used from late March up into April and again in the late fall, with Bluechip filling in during the brighter warmer months of the year. Excellent and much used pink pot plant—medium treatment July 1-March 1 and tall treatment March 1-June 30. Fine cloth house variety (July 15-November 1). Also grown as a disbud September-June. Tends to grow a bit short as a cut flower. Fine color, good production	Nov. 8	**3.25**
PD	**Dark Portrait.** Large pompon. Deep orchid sport of Portrait. Maximum color perfection achieved with a low temperature finish. Recommended for pot plants (medium treatment) September 1-March 1, and tall treatment March 1-June 30. Greenhouse spray pompon March 1-June 30 and mid-September to mid-November. Cloth house mid-July to October	Nov. 8	**4.00**

PINK POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
10-Week Varieties—Continued		
PD **Pink Portrait.** Large light lavender pink pompon. Portrait sport with an identical growth habit. A useful supplement for Portrait during periods of the year when a shade lighter than Portrait may be desired. Pot plant (medium treatment) September 1-March 1, tall treatment March 1-June 1. Also grown as fast disbud mid-September to June 1. Important greenhouse spray pompon March 1-June 15 and September 15-November 15	Nov. 8	$4.00
P **Profile.** (NEW—Yoder Bros.). Large pompon. Another distinctive color variation to add to the increasing number of beautiful Portrait sports. A lively pink shade between that of Portrait and Dark Portrait. Recommended for pots and spray programs from March through December. Summer color is best with some shade protection, but when finished cool, maximum color expression is dazzling among the Portraits. Available May 12	Nov. 8	4.50
Dark Bulkeley. Medium large, formal deep lavender pompon	Nov. 8	4.15
P **Criterion.** Large pink decorative with vigorous, compact growth habit. A new and valuable pot plant variety—medium treatment year round. This fine pink is used primarily as a pot plant. Cloth house July 15-October. Tolerates 54°	Nov. 8	3.65
N **Bonnie.** Medium large pink pompon. Improves Pinkette form and color. Formal and hard. Pink Igloo. Spray crops March 1-June 30 and mid-September to December. Cloth house July 15-October. Tolerates 56° Delayed by excessive high temperature during bud development. Benefited by 11-week timing	Nov. 10	3.75
N **Pennant.** Medium large deep pink pompon. Tolerates 56°. Recommended in the greenhouse April 1-November 15. Cloth house July 15-October 30	Nov. 10	3.65
P **Illini Accent** (NEW—Univ. of Ill.). Medium large decorative. Deep mauve purple. Stocky growth habit. Will tolerate 52° for initiation and development. Full color retention requires less than 60° finishing temperatures. Can be recommended for spray programs in the cloth house mid-July to October. In the greenhouse April to mid-June and mid-September to Thanksgiving. For pot programs with cool finish (tall treatment) September 15-June 15	Nov. 10	4.25
D **Cadenza.** Large anemone disbud. Lavender pink, vigorous. Tolerates low temperature (56°) for bud initiation and requires 60° or less for finishing. A fast winter disbud (October 1-May 30). Subject to shattering when flowers develop under high temperature conditions	Nov. 10	4.00
P **Personality.** A large luminous pink incurved pompon. Tolerant of 56° for bud initiation and development. Adds color and form improvement to Queen of Pinks as a pot plant. Tall treatment February 1-June 30 and September 1-December 31. Uniquely favored with short internodes and large foliage which complements it when grown as a pot plant	Nov. 10	4.00
PD **Dark Pink Pandora.** Medium dark pink decorative. Spray pompons mid-May to June and mid-September to mid-November. Fast disbud program June and mid-September to mid-November. Cloth house mid-September to October 30. Requires 60° initiation	Nov. 10	4.15
PD **Salmon Pandora.** Medium large salmon decorative. Selection from Bronze Pandora. Unparalleled color for cloth house mid-September to October and greenhouse mid-September to mid-November. Fast disbud June and early fall. Requires 60° initiation	Nov. 10	4.15
DN **Pandora.** Large luminous pink decorative. Vigorous and productive. Requires 60° initiation. Greenhouse May 15-July 1 and mid-September to mid-November. Fast disbud June and early fall. Cloth house mid-September to October	Nov. 10	3.75
Thyra. Medium deep lavender pompon. Used as a pot disbud	Nov. 10	4.15
Scintillation. Medium large deep pink pompon. Superb cloth house variety mid-September to October. Greenhouse mid-September to mid-November. Requires 60° bud initiation	Nov. 10	4.15
N **Linda Lou.** Medium large light lavender pink anemone. Responsive. Tolerates 52°. Very productive. Greenhouse April-June and mid-September to mid-November	Nov. 10	3.90
Dark Linda Lou. Medium large deep lavender pink anemone. Very productive. Tolerates 52°. Greenhouse April-June and mid-September to Mid-November. Cloth house July 15-October 30.	Nov. 10	4.15
D **Tuxedo.** Large anemone. Disbud. Fast crops November 1-January 1	Nov. 10	4.15
PD **Humdinger.** Bright luminous violet purple, formal pompon. We have been surprised, frankly, to see this rather strong color become one of the top several pink pot mums. Color tends to lighten somewhat at high temperatures but still pleasing and definitely used. Given medium treatment—used from March 1 through December. Many growers use six cuttings per 6 inch pot due to some tendency to shy breaking. Also grown as a disbud (March 1-November 15), cloth house mid-July to October. Tolerates 56°	Nov. 10	3.75
Cheerful (NEW—Yoder Bros.). Intermediate natural spray pompon. Lavender pink with tone on tone contrast. Best described as a "Delmar" flower on a "Delight" chassis. Recommended in the greenhouse spray program from mid-April through mid-December. Summer finishing temperatures above 80° may dull color contrast. Ideal for air-cooled houses. It has class and quality, radiantly cheerful. Available May 12	Nov. 12	4.50
DN **Masterpiece.** Very pleasing, soft, yet intense pink formal. The Masterpiece varieties are excellent from mid-March through mid-May and again from October 1 till normal date under glass. Used under cloth later in the season. They are heavy producers, make nice sprays, but colors do fade rapidly in heat. Tolerates 56°	Nov. 12	3.75

JETFIRE
A fine strong deep red color! Color at its best in cool weather but still attractive at moderately high temperatures. See page 39.

BLUECHIP
With its partner Portrait, has rapidly come to be the number one Pink Pomp for both greenhouse and clothhouse—and Florida. Remarkably fine color, even budset, and good production. See page 32.

PINK POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
10-Week Varieties—Continued		
D **Rose Masterpiece.** Medium large light lavender pink pompon. Disbud and spray	Nov. 12	$3.90
N **Memorial.** Medium pink anemone. Greenhouse March 15-June 15 and mid-September to mid-November. Also late cloth house	Nov. 12	4.15
Celebration. Intermediate pompon, salmon pink with golden bronze overcast. Requires low temperature finish, spray program April through May and Sept. through mid-Nov	Nov. 12	4.25
11-Week Varieties—Pinch August 5		
N **Taffeta.** A two-tone pink pompon. Greenhouse program March-April and mid-September to November. Cloth house mid-September to October. Best with cool finish. Used considerably in Florida. At its best in April greenhouse programs	Nov. 15	3.65
Dark Taffeta (NEW). Dark pink sport selected from Taffeta. Retains more color than Taffeta when fading becomes a problem. Fine for the late cloth house (mid-September to October). Greenhouse spray program April 1 to mid-May and mid-September to November. Less vigor than parent variety when flowered under low light conditions	Nov. 15	3.75
Magic (NEW). Medium large anemone. Dark orchid pink with gold tipped cushions. Very durable and useful in the cloth house. In the greenhouse it combines flawless performance with production and striking color. Tolerant of 56° for initiation and development	Nov. 15	4.25
DN **Dark Norma.** Large dark lavender anemone. Fast crop disbud mid-November to April 1	Nov. 15	4.00
Jubilation (NEW). Large pompon. Masterpiece pink. Growth is clean and strong with sharp responses. Jubilation is the best product to date for a late fall, early winter and spring Bluechip. Spray and habit are quite similar. Tolerant of 56° for initiation and development. Recommended for greenhouse spray programs mid-September to May. Superb cloth house performer whenever 11-week varieties are used	Nov. 15	4.25
Rhythm (NEW). Smooth light pink, medium large daisy. Characterized by extra vigor and fast rate of growth. A lively pink single that can be given the same timing as well as flowering closely with Galaxy. Greenhouse programs October 1-April 30	Nov. 15	4.25
PD **Vedova** (NEW—DePetris). Extra large Valencia size, anemone disbud. Pastel shade of a lustrous lavender pink with small green-tipped cushions. Color is best expressed in a cool 60° environment. Establishes a new precedence from October through May flowering periods either as a fast or regular disbud, or a pot variety using tall treatment. The combination of rigid stems and sizeable flowers far exceeds the potential that Beautiful Lady can provide. Available May 12	Nov. 15	4.50

PINK POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	11-Week Varieties—Continued		
D	**Freida.** Large anemone, disbud or spray, light lavender pink	Nov. 15	$3.75
	Illini Springtime. Medium large pink daisy. Greenhouse mid-September to November	Nov. 15	4.15
N	**Grand Slam.** Brilliant silvery pink daisy. Spray pompon October 15-November 30	Nov. 20	4.00
DN	**Almega.** Large silvery pink pompon. Form, color and substance excellent. Greenhouse program mid-September to April 30. Cloth house September 15-October. Color unexcelled in its season. Fast disbud mid-September May 1	Nov. 20	3.65
D	**Dark Almega** (NEW). Dark lavender pink sport selected from Almega. Habit performance identical to parent variety. Greenhouse mid-September-April 30. Cloth house September 15-October. Disbud mid-September to April 30	Nov. 20	3.75
DN	**Pink L. I. Beauty.** Large light pink, yellow cushion, anemone. Disbud and spray	Nov. 20	4.00
D	**Dark Pink L. I. Beauty.** An intensified color selection of Pink L. I. Beauty. Disbudded spray and disbud November 15-April 1	Nov. 20	4.15
	Staccato (NEW—Yoder Bros.). Intermediate formal pompon. Lavender pink. Much like an 11-week Minstrel in form, but reliably responsive all through the winter from October through April in the regular spray program. Tolerates 56° minimum. Flower durability lends itself well to cloth house use. Color brightness best retained at night temperatures of 60° or below. A productive and profitable addition. Available May 12	Nov. 20	4.50
D	**Marion Breedon** (NEW). Medium to large anemone. Smooth lavender-rose pink. Achieves a new standard for good form and color in anemones. Cloth house crops September 15-October 30 and fast disbud mid-September to December. Greenhouse regular crops mid-September to December	Nov. 20	4.25
PD	**Venoya** (NEW—DePetris). Extra large lavender-pink anemone disbud. Strikingly similar in growth to Vedova, Venoya flower develops a substantially larger green-eyed cushion with greater depth, in addition to flowering 5 to 7 days later. Fast and regular disbud programs, and pot plant programs using tall treatment from October through May. Color retention on Venoya too, requires cool 60° finishes. The year-round pot plant grower will find that both Vedova and Venoya well surpass the product standards that they are now accustomed to producing during the mid-winter months. Available May 12	Nov. 22	4.50
	Celebrity (NEW—Yoder Bros.). Intermediate decorative. Color is a discriminating shell pink. Objectively bred and selected for a larger sized flower and a more lucidly clear pink color than Almega provides. A real prize for greenhouse sprays from mid-October through mid-April. Production competes favorably with any outstanding late variety for winter flowering in the North. Maximum color needs a cool 60° finish. Flower size may be enlarged by partial disspray. Available May 12	Nov. 23	4.50
N	**Minuet.** Small true pink pompon. Excellent form. Spray program October 1-December 1	Nov. 23	3.90
	Illini Formal. Medium large, lavender pink pompon. Flowers for Thanksgiving. Very novel form with tubular ray petals. Greenhouse program March-April and mid-September to December. Late cloth house	Nov. 23	3.90
	12-Week Varieties—Pinch August 10		
D	**Delmar.** Medium pompon. Light lavender pink. Vigorous, productive and distinctive dot color contrast. Improves Almega habit and production. Spray pompons late September to late-April. Cloth house October only. Strong and productive in fall, winter and spring	Nov. 25	3.75
D	**Desire** (NEW—Yoder Bros.). Intermediate anemone. Delicately colored light pink. High crowned cushions. A forerunner to faster, and more efficent winter varieties for northern greenhouses. When grown as a natural spray this performs more advantageously on the fast disbud time schedule than it does on the regular greenhouse spray schedule. Excessive long day weeks on the regular schedule promotes early crowning and consequently overcropping. Recommended as a fast spray from November through mid-April. Color retention demands a cool 60° finish. Available May 12	Nov. 25	4.50
D	**Illini Roseglow.** Medium pink pompon. Requires low temperature (maximum 55°) finish. Productive. Best if sprays are disbudded. Greenhouse program March and in fall	Nov. 25	4.00
	Princess. Small pink pompon. Hard and durable. Cloth house October	Nov. 25	4.00
DN	**Beautiful Lady.** Large anemone. Disbud. Short and adaptive for fall and winter pot plants	Nov. 25	3.75
DN	**Valencia.** Large light lavender pink daisy. Disbudded spray mid-November to December. See additional notes on Valencias, page 23	Nov. 28	3.90
DN	**Dark Valencia.** Large lavender pink daisy. Greenhouse mid-November through December. See additional notes on Valencia, page 23	Nov. 28	3.75

PINK POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	12-Week Varieties—Continued		
D	**Dubonnet Valencia.** Dubonnet sport of Valencia. See additional notes on Valencia, page 23....	Nov. 28	$4.15
D	**Orchid Valencia.** Large daisy. Semi-anemone cushion. Fast disbud mid-November to April 1. See additional notes on Valencia, page 23....	Nov. 28	4.15
D	**Salmon Valencia.** Large daisy. Outstanding color. Disbud and disbudded spray mid-November to December. See additional notes on Valencia, page 23....	Nov. 28	4.00
	Nugano. Medium large pompon. A quality flower. One of the most important pink pompons for this season. Greenhouse program October 1-December 1. Add an extra week to improve height.	Nov. 30	4.15
	Heritage. Medium large, formal dark pink pompon. Tall and vigorous. Spray pompon March 1-May 1 and November 15-January 1....	Dec. 1	4.00
	Empress (NEW). Large disbud anemone. Deep magenta pink. An Enchantress seedling that combines increased vigor with faster, more uniform response. Performs well in the fast disbud program (November 1-May 1). Color and form possess unusual appeal....	Dec. 1	4.25
	13-Week Varieties—Pinch August 15		
	Eminence (NEW). Medium large daisy. Bright lavender pink. A 60° variety well suited to northern winter conditions. Very vigorous and should therefore be treated as a 14-week variety. Easily grown, strong and productive but exacting in its 60° minimum temperature requirements. Out-performs Debutante in production, size and substance. Late January through February crops require warm 60° temperatures....	Dec. 5	4.25
DN	**Enchantress.** Large lavender pink anemone. Disbud and disbudded spray pompon, mid-November through December....	Dec. 5	4.00
D	**Dark Enchantress.** Large deep pink anemone. Disbud and disbudded spray pompon mid-November through December....	Dec. 5	4.00
	Pink Snowdrop. Smooth light pink sport from Snowdrop. Growth habit and response are identical to parent variety. Spray program mid-November to mid-March....	Dec. 8	3.90
	Argyle. Small pink pompon. Hard flower plus very acceptable pink shade....	Dec. 10	4.15
N	**Debutante.** Medium large pink daisy with color similar to that of Valencia. Best at lower temperature finish, but very satisfactory for the December through early March part of the year round greenhouse program. Tolerates 56° but fine in cool 60° units....	Dec. 10	3.75
D	**Pink Supreme.** Large pink anemone. Habit resembles Improved White Supreme. Tall disbud.	Dec. 10	4.15
	Light Pink Minstrel. Sport of Minstrel, shell pink....	Dec. 12	3.75
DN	**Imp. Dark Supreme.** Large pink anemone. Short. Late disbud....	Dec. 13	4.00
N	**Minstrel.** Medium large lavender pink pompon. Spray pompon Nov. through Dec....	Dec. 13	3.75
	Dk. Pink Minstrel. A clear, clean deep mulberry shade of Minstrel. Spray pompon mid-November through December....	Dec. 13	3.90
	Imp. Pink Minstrel. From a designer's and retailer's standpoint, this is best of the Minstrels. Color resembles Pink Dot, and it does not deteriorate with maturity. Spray pompon mid-November through December....	Dec. 13	3.90
	14-Week Varieties—Pinch August 23		
N	**Riviera.** Medium large, luminous pink decorative. Requires 60° initiation. Finish cool. Spray pompon December 1-March 1....	Dec. 15	3.90
	Dark Riviera. Medium decorative, deep lavender same as Riviera except darker....	Dec. 15	4.00
	Rosalind. Medium light lavender daisy. Tolerates 56°. Spray pompon Dec. 1-March 1....	Dec. 20	4.15
N	**Defiance.** Medium large decorative. Spray pompon December 1-March 1. Requires 60° initiation, cool finish....	Dec. 20	4.00

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Note carefully instructions for ordering on page 8. No orders for less than 50 rooted cuttings of a variety accepted. Minimum total order, 500 cuttings.

50 only	$3.15	$3.25	$3.40	$3.50	$3.65	$3.75	$3.90	$4.00	$4.15	$4.25	$4.50
100-250 per 100	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.75
300-450 per 100	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.50
500-950 per 100	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.25
1000-up per 100	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	8.00

PINK POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
14-Week Varieties—Continued		
N **Medallion.** Medium large lavender rose pompon	Dec. 20	$3.90
Rose Medallion. Rose pink sport of Medallion	Dec. 20	4.15
Burgundy Kramer. Medium decorative, burgundy	Dec. 20	4.25
American Beauty Kramer. Dark rose pink decorative pompons produced on excellent growth with good stems and foliage. All the Kramer varieties are used in quantity along the West Coast and are good shippers	Dec. 20	4.25
Pink Kramer. Medium decorative, rosy lavender	Dec. 20	4.25
Lynda McLane. A late pink pompon with a habit that does not produce blind growth and a color that is highly acceptable. For late natural crops	Dec. 25	3.90
Alvoda. Large smooth Portrait pink decorative. One of the best for the late spray programs (November 15-March 15). Free growth. Habit, size and color improves Defiance, Debutante and Riviera. This variety contributes to the 14-week variety what Almega did to the 11-week group in the year round flowering programs. Disbudded spray treatment and cool 60° give best results. Tolerant of 56°	Dec. 25	3.75

BRONZE AND RED POMPONS

A complete List of Garden (Hardy) Varieties on Page 48

7-Week Varieties

P **W. P. Snyder.** Medium large decorative. Apricot bronze. For garden and pot culture (short treatment) April-May and September-October 15. Requires 60° minimum temperature	Oct. 1	4.00
P **Remembrance.** Medium large, carmine red pompon, compact growth. Best with 60° minimum temperature. One of the top several garden varieties for spring pot flowering	Oct. 5	3.75
P **Aglow.** Orange-bronze pompon. Spring and fall pot plants (medium tall treatment), April-May and September-October 15. Showy fall garden variety for a foreground border	Oct. 5	4.15
P **Lipstick.** Small burgundy red cushion pompon. Dwarf spreading habit coupled with free breaking action add up to a reliable May and June pot plant as well as in October. Short treatment recommended. Very shapely and colorful if finished at 60° or less	Oct. 5	4.25
PN **Mona.** Very hard, intermediate rust bronze pompon. A variety for border and pot culture. Medium treatment April-May and September-early October	Oct. 5	4.00
Huntsman. Red bronze decorative. Outdoor cut flower. Showy, dependable. Background garden variety	Oct. 5	4.15
P **Red Velvet.** Medium large crimson red decorative	Oct. 10	4.15
Carmine Queen. Carmine red pompon. Outdoor cut flower	Oct. 10	4.15
P **Dolli-Ette.** Medium large golden bronze spoon. A shapely pot plant (medium tall) April-May and September-early October. Fine foreground garden variety. Unusual flower form	Oct. 10	4.15
P **Toronto.** Medium orange-bronze decorative. Prolific bloomer and spreading cushion type growth. Attractive spring and fall pot variety (medium treatment)	Oct. 10	4.15
Carnival. Large pompon. Glowing orange red. Strong. Background garden variety	Oct. 10	4.00
P **Morocco.** Medium large reddish bronze decorative. Excellent pot variety (medium treatment) spring and early fall. Fine fall garden variety. Durable	Oct. 12	4.15
P **Coralhue.** Small apricot coral pompon. Low, spreading growth habit. Free breaker. Spring and fall pot plant (short treatment). Effective as a foreground garden variety	Oct. 12	4.15
PN **Mrs. DuPont.** Large buff apricot decorative. Tolerates 56°. Pot plant (medium treatment), spring-early fall	Oct. 12	4.15

8-Week Varieties—Pinch July 10

P **Radiance.** Medium red decorative. Breaks freely. Responds uniformly. Non-fading color. Pot plants spring-early fall (medium treatment)	Oct. 15	4.00
Calumet. Apricot bronze pompon of superior flower quality for cut flowers. Fine for spring crops in the greenhouse and early cloth house. Excellent at natural season. Tolerates 56°	Oct. 15	4.00
N **Rajah.** Large scarlet red daisy. Natural cut flower outdoors and greenhouse	Oct. 15	4.15
N **James Stewart.** Apricot gold pompon. Responds with Norona in the early shadings. July cloth house, natural cut flower for greenhouse and outdoors	Oct. 15	4.00
P **Sagamore** (NEW—Neal). Brilliant orange bronze large decorative suitable for pot culture	Oct. 18	4.15

BRONZE AND RED POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds

N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	8-Week Varieties—Continued		
P	**Bayonne** (NEW—DePetris). Intermediate incurved disbud. Warm orange-bronze color with coral overtones. Recommended exclusively for pots, short treatment, from early April through October. Short and spreading habit with prolific breaking action. Attractive foliage. One of the best early bronzes for pots bred to date. Available May 12	Oct. 20	$4.50
	Talisman. Talisman bronze, medium large daisy. Recommended in the greenhouse mid-April to July. Also early cloth house in normal season	Oct. 20	4.15
	Bronze Mary McArthur. Medium pompon, sport of Mary McArthur, orange bronze	Oct. 20	4.00
	Paradise. Medium large, coral red daisy. Tolerates 56°. Greenhouse spray programs mid-April to July and October. Also early cloth house	Oct. 20	4.15
	Paxon. Luminous bronze pompon with deeply serrated petals resembling Illini Snowdrift but larger and fuller, having small glossy finely cut foliage. Blooms October 20	Oct. 20	4.00
P	**Lee-Ette.** Small, silver-bronze double spider. Only reverse color displayed on completely tubular petals. A bizarre novelty for spring and early fall pots (medium treatment). Tolerates 56°	Oct. 23	4.15
PD	**Resolute** (DePetris). A large reddish-bronze semi-incurved pompon. Fully petalled. Bright red when finished cool and a smooth orange-yellow when finished warm. Versatile for pots (medium treatment) fast disbuds, and regular spray programs from April through October. Resolute along with Bayonne qualifies for top billing for Mother's Day and early spring flowering pots. Should make a durable outdoor cut flower variety in the South	Oct. 24	4.50
	9-Week Varieties—Pinch July 16		
PD	**Andante.** Intermediate decorative disbud. Apricot-bronze. Habit well adapted to pots from mid-April through October. Medium treatment. Improvement over Mrs. DuPont as a spring pot. Its color remains smooth under both cool and warm finishing temperatures	Oct. 25	4.50
P	**Red Ethrelda.** Medium large, coral red anemone. Dwarf, compact and responsive. Spreads well. Tolerates 56°. Pot plants October-May (short treatment)	Oct. 25	4.00
N	**Gaiety.** Large coral bronze daisy. Gaiety, Paradise, and Prelude constitute a trio bred to widen color range and add lively pastels to the group. Especially valuable April-May and early fall. Tolerates 56°	Oct. 25	3.75
	Firebird. Medium large, red-bronze decorative. Disspray	Oct. 25	4.00
N	**Bronze Dot.** Small pompon. Good two-tone. Cloth house mid-July to Oct. Greenhouse May 1-Oct.	Oct. 25	3.75
	Sally. Small pompon. An intensified bronze and increased size selection from Bronze Dot. Cloth house mid-July to October	Oct. 25	4.00
N	**Buckskin.** A tawny bronze daisy. Very productive. Greenhouse crop mid-April to October, cloth house mid-July to October	Oct. 25	3.75
D	**Stuart Ogg** (NEW). Intermediate decorative disbud. A luminous apricot pastel rarely found in the Chrysanthemum color range. Becomes radiantly alive under the spectrum of incandescent lights. An English development that grows and develops into superb fast disbuds from April through June and again from September through mid-November. Also, rapid rate of flower development necessitates cutting early while centers are still tight. Available May 12	Oct. 25	4.50
	Sybil. Medium large golden apricot daisy. Productive and durable. Has petalage and substance. Versatile and brilliant color. Spray programs May-October. Tolerates 56°	Oct. 30	3.90
	Bronzechip. Medium large decorative. Lively orange-bronze sport of Bluechip. Recommended for the greenhouse May 1-June and September to mid-November. Also valuable in cloth house (mid-July to October) and Florida winter crop. Color lightens some in high temperatures but still attractive. Tolerates 56°	Nov. 1	4.00
	Seneca. Large copper orange decorative	Nov. 1	4.15
P	**Ginger.** Medium large, reddish bronze anemone. Free breaking habit; a symmetrical showy pot plant (medium treatment) October-May. Will initiate bud at 56°. Livelier color than Gypsy. More extended flowering period than Barbara Fuller	Nov. 1	4.15
	Firefly. An orange red pompon that holds its color exceptionally well	Nov. 1	4.00
	Bronze Daisy. Medium large, light bronze daisy	Nov. 1	4.00
	Imp. Bronze Daisy. Intermediate copper red bronze daisy	Nov. 1	4.15
N	**Buccaneer.** Rich orange bronze daisy. Excellent habit. Dependable fall variety	Nov. 1	3.75
	Red Seneca. Medium large rust red decorative	Nov. 1	4.00
	Bronze Buckingham. Medium large rust orange daisy	Nov. 1	4.15
P	**Barbara Fuller.** A dark coral red anemone. Dwarf compact growth habit. Pot variety (short treatment) April-May and September-December. Improves Gypsy in all respects	Nov. 1	3.90
	Navaho. Medium large, brick red pompon	Nov. 1	4.00
	Red Daisy. Medium single	Nov. 1	3.90
	Imp. Red Daisy. Medium daisy. Petalage, color, and spray surpass Red Daisy	Nov. 1	4.00

BRONZE AND RED POMPONS

10-Week Varieties—Pinch July 22

	Variety and Description	Normal Flowering Date	Price 50 Only
N	**Jetfire.** Flaming red decorative pompon, medium to large. At its best in the cloth house September-October or under glass in spring and fall. Holds color well in the summer cloth house or even under glass in summer. Somewhat susceptible to verticillium wilt. Tolerates 56°. See page 34	Nov. 5	$3.50
D	**Nectarine.** Medium large apricot orange pastel decorative. Fine as spray pompon or fast disbud April-May and late September-Thanksgiving, or in the cloth house mid-September to October. Must finish at 60° or less. Remove center bud. Tolerates 56°	Nov. 5	4.00
	Mrs. Charles Wylie. Dark bronze anemone	Nov. 5	3.90
N	**Orange Beauregard.** Lively, light orange or golden bronze sport from Beauregard. Yellow during high summer temperatures. Greenhouse spray programs April to mid-June and mid-September to November 15. Cloth house July 15-October. Tolerates 56°	Nov. 5	3.65
N	**Beauregard.** Attractive and very reliable reddish orange pompon. Medium size, decorative type flower. Excellent under glass mid-April to June and again in mid-September to Thanksgiving. Satisfactory in summer except that color lightens some. Fine cloth house variety mid-July to October. Tolerant of 56° for bud initiation. Due to its very reliable bud set and development, good production, heavy stem and durable flower, Beauregard is by far the number one bronze pompon in the 9-10 week group, both in the North and in Florida; and its yellow sport is rapidly becoming more important in that color class	Nov. 5	3.40
	Dark Beauregard. Medium large pompon. Luminous mahogany bronze sport from Beauregard. Same growth habit, slightly smaller flower. Better high temperature color retention. Tolerates 56°. Greenhouse April to mid-November, cloth house July 15-October	Nov. 5	4.00
	Imp. Dark Beauregard (NEW—Neal). An intense dark reddish bronze sport of the ever popular Beauregard. Doesn't have the open center. Should be used during the period for Beauregard	Nov. 5	4.00
	Butterscotch. Medium large formal pompon. Golden orange. Good high temperature response. Greenhouse June 1-September 30	Nov. 5	4.00
	Red Rust. Medium large decorative. Rust bronze	Nov. 5	4.00
N	**Rubicon.** Medium large, red bronze decorative pompon. We find it hard to beat under glass from mid-September till about November 15, after which we switch to Rusticon. Also used May-early June in the greenhouse. It is also fine under cloth from early September on. Rather on the short stemmed side, but a fine strong color and a good producer	Nov. 5	3.65
	Magician. A large bronze pompon about the size of a partially disbudded Masterpiece	Nov. 5	4.00
N	**Bittersweet.** Medium large red bronze daisy	Nov. 5	3.90
P	**Bronze Portrait** (NEW—Rosacker). Intense, reddish-bronze pompon. A Samovar color addition to the ever-widening Portrait series. Less tolerant to high finishing temperatures for color retention. Useful in greenhouse spray program from March through mid-June and again from late September through mid-November. Pots: late September through February using medium treatment and March through May tall treatment. Available May 12	Nov. 8	4.50
P	**Gypsy.** Small rust bronze anemone. Pot plant (short treatment) March-May and Sept.-Dec.	Nov. 8	4.00
N	**Samovar.** Medium large, intense rust red pompon. Cloth house and greenhouse Sept.-Oct.	Nov. 10	3.75
P	**Inca.** Medium large anemone, amber-bronze turning to bright yellow at high temperatures. Versatile pot plant throughout the year (medium treatment). Superior to Sunray	Nov. 10	4.00
	Chevron. An intense bronze pompon. Holds color better than Red Rust or Seneca. Tolerates 56°. Greenhouse spray program mid-September to mid-November, cloth house Sept.-Oct.	Nov. 10	4.00
DN	**The Titan.** Large intense red anemone. Fast disbud September 15 to mid-November	Nov. 10	4.00
D	**Bronze Pandora.** Bright coral bronze sport of Pandora. Outstanding vigor and color for fall. Fast disbuds and spray pompons June and early fall. Late cloth house	Nov. 10	4.00
	Climax. Medium large, intense orange pompon. Vivid color stimulates demand for bronze. Excellent vigor and production. Spray program April-June and early fall, cloth house July 15-October. Tolerates 56°. Will not stand extreme summer temperatures	Nov. 10	3.65
PD	**Copperhead.** A large, coppery bronze decorative. Very satisfactory grown as disbudded sprays or disbudded to single flower. Pot plant (tall treatment) September-May. Disbud and spray pompon mid-fall and spring	Nov. 10	3.75
	Giltglow (NEW—Yoder Bros.). Intermediate bicolored single. An expressive reddish-bronze contrasted with a smart green disc. Gold reverse. Medium to short growth habit. Recommended for the regular spray program from mid-April through June and mid-September through November. Some foliar mottling can be induced if flowered when very high summer greenhouse temperatures prevail. This will introduce a striking new color version not presently in the commercial pompon trade. Available May 12	Nov. 10	4.50
P	**Red Humdinger** (NEW). An exciting burgundy red sport from Humdinger. Color retention is good. Luminescent sheen unmatched by any other red available to pot programs. Color has created much favorable comment wherever shown. Can be flowered in the same periods and schedules as Humdinger. Pot plant medium treatment March-December	Nov. 11	3.75

BRONZE AND RED POMPONS

P—Varieties best for pot culture **D**—Varieties that make good disbuds
N—Best varieties for fall or natural season flowering (without shade)

	Variety and Description	Normal Flowering Date	Price 50 Only
	10-Week Varieties—Continued		
D	**Bronze Masterpiece.** Medium large pompon. Tolerates 56°. Disbud and spray pompon April-May and mid-September to mid-November	Nov. 12	$3.90
P	**Dark Bronze Masterpiece.** Dark sport of Bronze Masterpiece. Disbud and spray pompon April-May and mid-September to mid-November. Brick red with cool finish. Tolerates 56°	Nov. 12	4.00
D	**Paragon.** A large rust red pompon. Sprays mid-September to mid-November. Fast disbud March-April and early fall. Cloth house mid-September to October	Nov. 12	3.90
	Amberhue. Medium large, orange bronze daisy. Improves Buccaneer in growth, form, production and color retention. Green eyes. Spray programs mid-April to mid-June and October to mid-November. Stalled by high temperature finish	Nov. 14	4.00
	11-Week Varieties—Pinch August 5		
	Beauregard Supreme (NEW). A sport from Beauregard. Color the same. Size of flower is nearly doubled. Response shifts to 11 week group. Vigor is increased. Pedicels are longer and spray somewhat more open. Tolerates high temperatures well. Extends the Beauregard season into the fall and early spring (March-June) and September-November. Very good late cloth house variety September-October	Nov. 15	3.75
	Bronze Jubilation (NEW—Yoder Bros.). Large pompon. A rosewood-bronze sport of Jubilation. Equal in all respects, other than color, to its parent variety. A finishing temperature of 60° or less is required for maximum color retention. A real performer for October through mid-May greenhouse programs as well as late September and October cloth houses. The Jubilations efficiently contribute needed vigor for northern winter pompon programs. They will tolerate lower bud initiation temperatures of 56-60°. Available May 12	Nov. 15	4.50
N	**Mrs. Dewey.** A heavily petalled, deep orange bronze daisy	Nov. 15	4.00
N	**Thelma.** Very brilliant orange scarlet pompon, especially when finished at cooler temperatures. Greenhouse program March-April and mid-September to Thanksgiving. Excellent under cloth September-October. An outstanding color	Nov. 15	3.50
	Ranger (NEW). Medium large, true orange pompon. A smooth brilliant new color. Always productive and reliable. Tolerant of high temperature for bud development. An outstanding cloth house variety. Recommended in the greenhouse March 15-June and mid-September to Thanksgiving. Cloth house September-October	Nov. 15	4.25
	Red Princeton. Medium rust red, decorative pompon	Nov. 15	4.15
	Illini Warrior. Medium large, rust bronze pompon	Nov. 20	4.00
	Legal Tender. Medium large decorative	Nov. 20	3.90
N	**Rusticon.** Medium large, rust red pompon. Greenhouse program October-November; cloth house mid-September-October	Nov. 20	3.75
D	**Illini War Paint.** Large, smooth, maroon red decorative. Heavy, vigorous growth. Restrict to low temperature finish. Fast disbud October-December and disbudded spray October-November. Cloth house mid-September to October	Nov. 22	3.90
DN	**Olnura.** Large apricot buff anemone. Valencia size disbud. Disbudded spray March-April and mid-September-December. Disbud same period, an outstanding DePetris achievement	Nov. 22	3.90
N	**Festival.** Medium large red single. Short stocky growth habit. Excellent for Thanksgiving	Nov. 23	4.00
N	**Bronze Minuet.** Medium large pompon	Nov. 23	4.00
	Dark Bronze Minuet. Medium pompon, dark rosewood salmon	Nov. 23	4.25
N	**Rubaiyat.** Velvety red medium size formal pomp. Unequalled October through Christmas flowering. Slowed by high temperature during bud development. Spray program mid-September to December. Cloth house mid-September to October	Nov. 23	3.65
DN	**Red Rolinda.** Medium large, brick red anemone. Disspray and disbud	Nov. 23	3.90
	12-Week Varieties—Pinch August 10		
	Illini Redwood. Medium large red pompon. Hard, durable and well formed flower. Fine red pomp for Thanksgiving and December	Nov. 25	4.00
DN	**Bronze Goldsmith.** Large amber bronze decorative. Disbudded spray October 15-November. Disbud October-November, and cloth house October	Nov. 25	3.75
	Falcon. Medium large, reddish bronze pompon	Nov. 25	4.15
D	**Forever Amber** (NEW—Yoder Bros.). Intermediate wide petaled decorative disbud. Retains a velvety smooth amber bronze color. A splendid choice for the fast disbud program from mid-November through April. A real standout in January and February for the northern environment. Comparatively described as an improved winter Luxury. Available May 12	Nov. 25	4.50
	Yolanda. Medium large, tawny bronze anemone	Nov. 25	4.15
	Indian Head. Intense red bronze daisy	Nov. 28	4.00

BRONZE AND RED POMPONS

Variety and Description	Normal Flowering Date	Price 50 Only
12-Week Varieties—Continued		
DN **Apricot Valencia.** Large apricot bronze daisy. Disbud and spray pompon mid-November-December. See notes under Valencia, page 23	Nov. 28	$3.90
D **Crimson Valencia.** Large maroon red daisy. Disbud and disspray. See notes under Valencia	Nov. 28	4.00
N **Galaxy.** Medium large bright orange single. Excellent form, color and response. Spray pompon October-April. Always dependable	Dec. 1	3.65
Orange Galaxy. A color sport from Galaxy. Golden orange. Spray programs October-April	Dec. 1	4.15
Holiday. Medium large red daisy. Spray pompon mid-November to mid-April	Dec. 1	3.90
Crackerjack (NEW). Medium large daisy. The color is a brilliant reddish bronze. Crackerjack is the answer to a red Galaxy. Vigorous and productive, performing well in fast and regular spray programs (October 15-April 1). Shaded for Thanksgiving, lighted for Christmas or Valentine's Day, Crackerjack provides an item of irresistible consumer appeal	Dec. 1	4.25
D **Red Empress** (NEW—Yoder Bros.). Large disbud anemone. A mauve-red sport of Empress. An essentially fine and appealing fast disbud from November through April. Available May 12	Dec. 1	4.50
13-Week Varieties—Pinch August 15		
D **Bronze Enchantress.** Apricot bronze sport. Disbud and spray pompon mid-Nov. to Dec.	Dec. 5	4.15
DN **Red Enchantress.** Large disbud and disspray anemone. Clear maroon red. Attractive fast disbud for Christmas. All Enchantress varieties are improved by 60° initiation and less than 60° development. Disbud programs mid-November to December	Dec. 5	3.90
N **Debonair.** Large red pompon. Fine form	Dec. 5	3.90
D **Imp. Bronze Supreme.** Large buff bronze anemone. Disbud. Short	Dec. 10	4.15
Cavalcade. Medium pompon, very good normal bloomer, mandarin red and gold	Dec. 10	4.25
Harlequin. Crimson red, intermediate decorative	Dec. 10	4.00
N **Christmas Star.** Medium large red single. Spray pompon November 15-March 15	Dec. 12	3.75
Bronze Minstrel. Medium large coral red pompon. Fine for Christmas. Mid-Nov. to Dec.	Dec. 13	3.90
N **Dark Bronze Minstrel.** Reddish bronze sport. Deeper color. Smaller, harder flower. Spray pomp mid-November to December	Dec. 13	3.90
Flame Minstrel (NEW—Delworth). Intermediate pompon. Reddish-bronze Minstrel selection. Spray programs from mid-November through December. Available May 12	Dec. 13	4.50
Red Mintsrel. A sport from Bronze Minstrel with a lively red glow added. Cinnamon red. Spray pompon mid-November to December	Dec. 13	3.90
14-Week Varieties—Pinch August 23		
N **Bronze Riviera.** Medium large orange bronze decorative. Spray pompon December-February	Dec. 15	4.00
Claret. A brilliant red daisy	Dec. 15	4.15
Topaz. Warm orange bronze daisy. December 1-February	Dec. 15	4.15
N **Christmas Greeting.** Large red decorative. Fine for Christmas. Spray pomp November 15-December	Dec. 15	3.65
N **Merrymaker.** Medium large red daisy. Spray pompon December-February	Dec. 20	3.75
DN **Poinsettia.** Large scarlet red daisy. Tall spray pompon December only	Dec. 20	3.75
Bronze Kramer. Bronze decorative, very good shipper, used extensively along the West Coast	Dec. 20	4.25
Red Kramer. Red decorative	Dec. 20	4.25
Brick Red Kramer. Brick red decorative pompon produced on stiff stems and good sprays, used extensively on the West Coast, a good shipper	Dec. 20	4.25

Special Collections

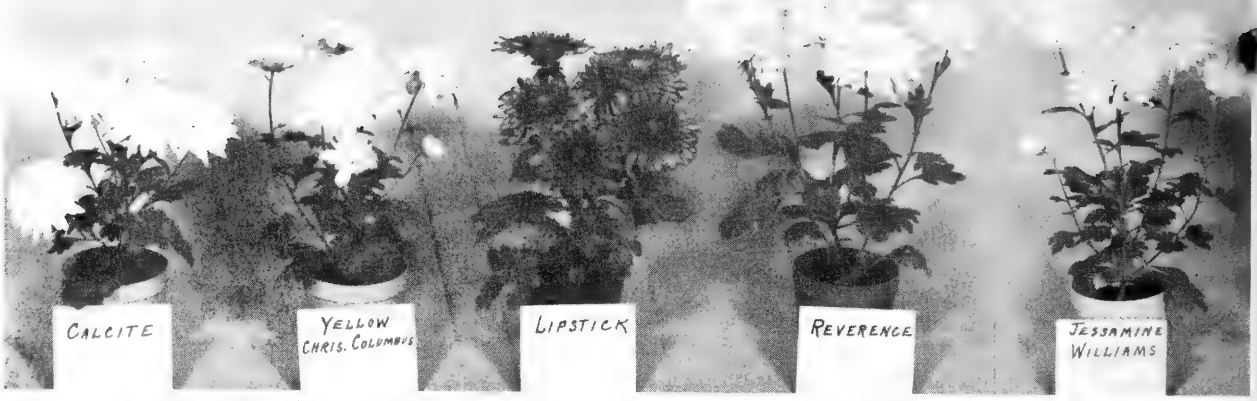
Rooted cuttings of a given number of varieties may be ordered as a collection. Example: 500 rooted cuttings, 50 each of 10 varieties; or 350 rooted cuttings, 50 each of 7 varieties. Any desired quantity may be ordered in units of 50 or more.

Minimum collection is for 300 rooted cuttings. In ordering, please specify:

1. Whether you want standards or pompons.
2. Flowering date (response group) desired.
3. Colors desired.
4. Time of shipment.

Our propagator reserves the right to make the choice of varieties. Your order will be filled with good varieties and the cuttings you receive will be properly labeled as to variety. And of course, only our usual top grade cuttings will be shipped. The reduction in price is made only because our propagator can select varieties that are in good supply at the time you want shipment.

	Per 100
300 to 450 Rooted Cuttings	$6.00
500 to 950 Rooted Cuttings	5.75
1000 or more Rooted Cuttings	5.50



Garden Mums flowered in May, no shade, no lights, are a "must" in any spring bedding plant program. Very easy to grow, showy, and irresistible sales appeal are the reasons. In the several years we have planted these May flowering 3 inch hardies outdoors, the second crop that followed (in September) was even better than the same crop from plants which had not flowered in the spring. All of the above varieties flowered early to mid-May from a March 2 potting. See GROWER TALKS, August 1957, page 1, for further details.

Garden (HARDY) *Varieties*

THE BEST in Garden Mum Varieties for Various Purposes

	FLOWERING PERIOD	WHITE	YELLOW	PINK	BRONZE
FOR GARDEN USE where short bushy plants with lots of flowers are wanted	Early Sept.	Paper White Candlelight Osage D. D. Ahrens	Reverence Delight Early Gold Genista	Rosa Nyes Favorite Joan Helen Amelia	Early Harvest W. P. Snyder Flamboyant Early Kathleen
	Late Sept.	Powderpuff Chris. Col. White Cloud North Star (Daisy)	Yel. Chris. Col. Real Gold Ming Golden Carpet	Coquette Royal Robe Chippewa Alert	Apache Lipstick Chippa Red Rouge Cushion
	Early Oct.	Gardenia Lyric Avalanche Pepita	Chas. Nye Moonlight Arlora Freya	Spellbound Maj. Cushion Joyous Mischief	Comd. Cushion Red Cloud Iron Mountain Mrs. DuPont
FOR CUT FLOWERS	**FLOWERING PERIOD**	**WHITE**	**YELLOW**	**PINK**	**BRONZE**
	Early Sept.	Early Sept. varieties too short stemmed and bushy for cut flower use.			
	Late Sept.	White Wonder North Star	Golden Wonder Astoria Lee Powell	Petrisian Rose Malinda Brown Petrisian Pink	Br. Wonder Kath. Lehman Holiday (H)
	Early Oct.	Horizon Limelight Classic	Gold Rush Treasure Sunstone Sarasota	Sonny Northern Queen Mayflower Enterprise	Firecracker Calumet Carmine Queen James Stewart
FOR SPRING POTS In order of preference. Date shown after each variety is flowering date from our 1957 trials. All plants potted March 2, pinched March 9. No lights, no shade. Mother's Day 1958: May 11. See GROWER TALKS, August 1957, for more details.	**FLOWERING PERIOD**	**WHITE**	**YELLOW**	**PINK**	**BRONZE**
	Spring	Crystal Maid 5/1 Chris. Columbus 5/10 Ostosa 5/3 Calcite 5/3 Gardenia 5/10 Jess. Williams 5/10 Pilgrim 5/3 White Rice 5/10 Maestro 5/10 Lyric 5/10 Horizon 5/10 Silverplate 5/10	Yel. Chris. Columbus 5/3 Blazing Gold 5/10 Reverence 5/1 Roulette 5/3 Lemonade 5/13 Honeysweet 5/10 Garland 5/15 Pomponette 5/10 Ming 5/10 Yellow Spoon 5/10 Chiquita 5/13 Sunburst 5/6	Joybringer 5/3 Joyous 5/10 Chippewa 5/3 Mischief 5/1 Major Cushion 5/10 Petrisian Rose 5/10 Orchid Spoon 5/3 Joan Helen 5/1 Spellbound 5/10 Twinkle 5/3 Cecelia 5/10 Masquerade 5/10	Lipstick 5/1 Indian Red 5/10 Fire Engine 5/3 Remembrance 5/3 Leshara 5/10 W. P. Snyder 5/10 Aglow 5/1 Iron Mountain 5/1 Orsona 5/10 Caprice 5/10 Radiance 5/3 Early Kathleen 5/10

Garden (HARDY) Varieties

For additional Garden Varieties, see general list beginning on page 8. Generally varieties which flower on or before October 15 are suitable forgarden use.

P—Varieties suitable for pots **D**—Better when disbudded

WHITE

	Variety and Description	Height	Matures	Price 50 Only
	Osage. Cushion, decorative, border white	Short	Sept. 5	$4.00
	Candlelight. Decorative, secondary border, ivory white	Med.	Sept. 5	3.90
	D. D. Ahrens. Decorative, background, white	Tall	Sept. 10	4.00
	Paper White. Decorative, secondary border, white	Med.	Sept. 10	3.75
P	**Crystal Maid.** Cream decorative pompon produced on low growing plant that is well suited for borders. Responds well to spring pot plant culture. Also very good for 3 inch pot blooming	Short	Sept. 12	4.00
	White Cushion. Cushion border, white showing traces of pink in buds. Blooms later the first year	Short	Sept. 15	3.50
P	**Gloria.** A very free flowering medium sized decorative pompon. Flowers are larger and more double than Chris. Columbus. Good growth habits and foliage. Makes a beautiful spring pot plant	Med.	Sept. 15	4.00
P	**Calcite.** Cream white decorative, responds to off-season blooming. Good spring garden pot plant	Med.	Sept. 15	3.75
	Powderpuff (Cushion). Border, white	Short	Sept. 15	3.75
	Polar Ice. Decorative and secondary border, white	Med.	Sept. 15	3.90
P	**White Bounty.** Cream white button pompon. Responds to off-season blooming. Spring garden pot plant	Tall	Sept. 15	3.65
	White Tower. Large pompon, secondary border and cut; cream white	Tall	Sept. 15	3.90
	White Sail (NEW—Neal). Large white decorative with cream center. A clean vigorous grower, prolific bloomer	Med.	Sept. 23	4.50
	White Wonder. Large pompon, secondary border and cut. Ivory white	Med.	Sept. 25	3.90
	Jessamine Williams. White quilled type spoon; early, free flowering variety	Med.	Sept. 25	4.15
PD	**Shalimar** (H). Large white decorative flowers produced on medium height growth. Good Mother's Day and later pot. Better when disbudded	Med.	Sept. 25	3.90
	Theresa Stone. Cream ivory pompon for secondary border or cut	Med.	Sept. 25	4.15
	White Rice. Large pompon for border and pots. White	Short	Sept. 25	3.90
P	**Ostosa.** A medium large paper-white Pompon on a semi-dwarf plant. Early and very free flowering. Excellent for spring pots (April 1-June 15) and for garden use in the fall. Short treatment	Short	Sept. 25	4.00
	White Cloud. Decorative, secondary border, white	Tall	Sept. 25	4.00
	North Star. Single, background and cut flower; white	Med.	Sept. 28	3.90
P	**Pepita.** Small button pompon, Good spring pot plant variety	Med.	Sept. 28	3.90
P	**Chris. Columbus.** A pleasing cream colored, medium sized decorative. Probably number one garden variety for spring flowering in pots (April 1-June 15), and fine in pots September 1-October 15. Short treatment. Excellent, compact garden variety for fall.	Tall	Oct. 1	3.65
	Spindrift. Decorative, secondary border; white	Med.	Oct. 1	4.00
PD	**Gardenia.** Large white decorative pompon. Fine pot plant March 1-October 15. (Medium treatment). Best when disbudded. Prolific and showy garden variety	Med.	Oct. 15	3.75
PD	**Larry** (NEW). Intermediate paper-white pompon. Compact, short habit defines its place as a high quality pot variety suitable for May and June and again in October, using medium treatment. Flowers with Chris. Columbus. Satisfactory as a natural spray in pots. Disbudding substantially increases flower size as well as improving flower substance. Not troubled by pink tinges at temperatures less than 60°. This is tops among the 7-week whites for pots. Available May 12	Short	Oct. 1	4.25
P	**Marshmallow.** Medium single with waxy petals; very good low growing garden variety. Excellent for spring pots	Med.	Oct. 5	4.15
	Limelight. Decorative, background and cut. White	Med.	Oct. 5	4.00
P	**Lyric.** Small single with good substance in petals. Very attractive as spring pot plant. Very good also as 3 inch pot plant	Short	Oct. 5	4.00
	Avalanche. Large decorative. Flowers on early crown buds	Tall	Oct. 5	4.15
	Horizon. "The" early garden white for late summer. Also early fall cut flower use. Pure white and a more formal type than Chris. Columbus. Nice as a garden variety at normal season	Med.	Oct. 5	3.90
D	**Ivory Glow.** Large ivory disbud	Med.	Oct. 5	3.75

WHITE GARDEN (Hardy) VARIETIES

Variety and Description	Height	Matures	Price 50 Only
P **Benora.** Medium large white pompon with ivory center. Good pot variety April 1-June 15 and early fall (medium treatment). Real improvement over Chris. Columbus for durability. Prolific bloomer	Short	Oct. 8	$4.00
P **Classic.** Small white semi-formal pompon. Outdoor cut flower. Follows Horizon	Tall	Oct. 10	4.00
P **Minnesota** (NEW—DePetris). Large white incurved pompon. Lends itself well to disbudding and is particularly suitable for spring pot plant culture	Med.	Oct. 10	4.50
P **Maestro.** White pompon. Dwarf, compact growth. Excellent for borders and pot plants April 1-June 15 and September-October (short treatment)	Short	Oct. 10	4.15
P **Albion.** Large decorative, white; compact growth habit. Very attractive as a spring pot plant	Med.	Oct. 10	4.25
White Masquerade (NEW—Neal). Silvery white button producing low masses of blooms. A good companion for the popular Masquerade	Med.	Oct. 10	4.50
White Spoon. Spoon, secondary border, white	Med.	Oct. 10	3.90
P **Silverplate.** White decorative pompon. Outdoor cut flower. Pot plant variety May 1-June 15 and early fall (medium treatment)	Med.	Oct. 12	4.00
PD **Michigan State** (NEW—DePetris). Large white decorative pompon ranging 4" in diameter when disbudded. Responds well and makes a beautifully shaped pot plant and garden disbud	Med.	Oct. 14	4.50
Pilgrim. Medium large pompon. Clear white. Temperature tolerance of Chris. Columbus, improving that variety in all respects. Durable, compact garden variety	Med.	Oct. 15	4.15
Silver Ball. Large pompon; background or cut. White	Tall	Oct. 15	3.65
Irene. Small white pompon	Med.	Oct. 15	4.15
Norona. Small, ivory white, solid pompon	Med.	Oct. 15	4.00
Blizzard. Small formal pompon. Clear white. Tolerates 52°. Durable and productive. Spray programs July 1-September 1. Earlier, larger, and more productive than Pinocchio. Best spray when treated as a 9-week variety	Med.	Oct. 15	3.90

YELLOW GARDEN (Hardy) VARIETIES

Pathfinder. Decorative, serrated petals. Secondary border. Deep lemon	Med.	Aug. 28	$4.00
Reverence. Large decorative border, chamois yellow	Short	Sept. 1	4.15
P **Early Gold.** Medium pompon, low growing, responds very sharply to off-season blooming. Sometimes considered too short	Short	Sept. 5	4.25
Golden Hours. Pompon. Secondary border. Chrome yellow	Med.	Sept. 8	3.65
Delight (H). Medium golden pompon; secondary border	Med.	Sept. 12	4.00
Genista. Decorative, canary yellow; secondary border	Med.	Sept. 12	4.00
Sunapee. Deep lemon pompon. Secondary border	Tall	Sept. 15	3.75
P **Pomponette.** Orange pompon of medium size, low growing. Responds to off-season blooming. Good spring garden pompon	Short	Sept. 15	3.65
Yellow Cushion. Cushion, decorative, border. Light yellow	Short	Sept. 15	3.50
Golden Cushion. Golden yellow cushion, border	Short	Sept. 15	3.50
Defiance (H). Golden yellow decorative; secondary border	Tall	Sept. 15	4.00
Muriel Rice. Large, light lemon decorative. Secondary border	Med.	Sept. 15	4.15
P **Early Yellow.** Small deep lemon button; secondary border	Short	Sept. 15	3.75
Golden Carpet. Golden cushion, border	Short	Sept. 15	3.90
P **Ming.** Medium large pompon. Golden orange-yellow. Responds well for spring pot plants.	Med.	Sept. 18	4.15
Golden Gopher. Orange yellow decorative and secondary border	Med.	Sept. 20	4.25
P **Sept. Sunshine.** Medium single, very prolific with blooms. Responds well for spring pot plants. Very showy, bright lemon	Med.	Sept. 20	3.65
Real Gold. Large, deep golden decorative. Secondary border	Med.	Sept. 20	4.00
Wychwood. Large pompon, secondary border, canary	Med.	Sept. 20	3.65
Canary Wonder. Large canary yellow pompon. Secondary border and cut	Med.	Sept. 25	3.90
Golden Wonder. Large golden pompon. Secondary border and cut	Med.	Sept. 25	3.90
Sept. Gold. Lemon cushion. Border	Short	Sept. 25	3.75
Golden Sunset. Large, copper gold decorative. Background	Med.	Sept. 25	3.90
P **Honeycomb.** Honey yellow pompon. Good form, responds well for spring pot plants	Med.	Sept. 25	4.00
Sulphur Spoon. Light yellow spoon. Secondary border	Med.	Sept. 25	4.00
Tangerine. Large, deep orange decorative. Secondary border	Med.	Sept. 25	3.90
Yel. Supreme (H). Bright lemon cushion. Border	Short	Sept. 28	3.50

YELLOW GARDEN (Hardy) VARIETIES

	Variety and Description	Height	Matures	Price 50 Only
P	**Yel. Chris. Columbus.** The number one variety for May flowering in 3 inch pots. Will set buds without shade or lights in May. Medium large, lemon yellow decorative. Short treatment April 1-June 15 and September 1-October 15	Med.	Oct. 1	$3.65
P	**Moonlight.** Medium large, sulfur yellow pompon. Short, compact growth habit. For borders and pot plants. Medium treatment pot plant April 1-June 15 and September 1-October 15	Med.	Oct. 1	4.15
	Ruby Breithaupt (NEW—Neal). Large decorative, displaying informal flowers of bright primrose yellow. Fine for secondary borders or table bouquets	Med.	Oct. 1	4.50
	Freya. Very large, deep golden yellow. 4 inch blooms produced on medium upright growth with excellent stems and foliage. Good flower placement	Med.	Oct. 1	4.15
P	**Kings Ransom** (NEW—Neal). Golden yellow decorative making a splendid fall showing. Large showy blossoms. An outstanding contribution to the spring and fall garden pots	Med.	Oct. 1	4.50
	Tranquility. Decorative, secondary border. Light lemon yellow	Med.	Oct. 1	4.00
P	**Astoria.** Medium large, bright lemon yellow pompon. More prolific than Yellow Chris. Columbus. Medium treatment pot plant April 1-June 15 and September 1-October 15.	Med.	Oct. 5	4.00
	Charles Nye. Deep yellow large pompon. Showy, prolific garden variety. Very popular.	Tall	Oct. 5	4.00
P	**Chiquita.** Small deep lemon yellow button pompon. Chic for spring and fall pot plants. An intermediate garden variety. Medium treatment pot plant April 1-June 15 and September 1-October 15	Med.	Oct. 5	4.00
D	**Ethel Waters.** Large, light lemon incurved. Disbud. Sport of Ivory Glow	Med.	Oct. 5	4.15
	James Eadie. Large, deep chrome pompon. Secondary border	Med.	Oct. 5	3.90
	Newton. Large, 4 inch golden yellow cactus flowering. Dwarf bushy growth and good stem and foliage. Blooms from late September	Med.	Oct. 5	4.25
PD	**Illinois** (NEW—DePetris). A large, formal golden yellow incurved with excellent substance. A credit to the new spring pot plants and large disbud garden mums	Med.	Oct. 5	4.50
	Yellow Avalanche. Large, light lemon decorative. Background	Tall	Oct. 5	4.15
	Roulette. Large decorative; bright yellow. Dwarf growth. Response good for spring pots and an excellent addition	Short	Oct. 5	4.15
	Polaris. An early golden buff daisy. An Arctic hybrid. Background garden variety and October cut flower	Med.	Oct. 5	4.15
	Mrs. Rotan. Large, deep chrome decorative. Secondary border and pot	Med.	Oct. 5	4.00
P	**Yellow Spoon.** Medium large light yellow spoon, single. For garden and pot culture. Showy and artistic	Med.	Oct. 5	4.00
	Sunstone. Light yellow spoon novelty. Background or cascade	Tall	Oct. 8	4.00
PD	**Spode.** Large incurved. Short growing bright lemon garden variety suitable for growing as a disbud. Responds well for spring pot plants	Short	Oct. 8	4.00
	Treasure. Small deep yellow pompon. Vigorous, upright habit for outdoor cut flowers and natural greenhouse crops. Also for cloth house July 1-31	Tall	Oct. 10	4.00
	Lee Powell. Large, golden yellow decorative. Vigorous background and cut flower variety	Tall	Oct. 10	4.15
	Golden Spoon. Golden yellow spoon. Secondary border	Med.	Oct. 10	3.90
P	**Yellow Blanket.** Small yellow button; responds for spring garden pot plants	Med.	Oct. 10	3.65
	Bright Forecast. Very formal yellow pompon. Outstanding flower quality. Background for gardens and outdoor cut flower	Tall	Oct. 10	3.90
P	**Goldrush.** Dark yellow daisy. Cut flower variety	Med.	Oct. 10	4.15
P	**Yellow Calumet** (NEW—Neal). Bright lemon pompon, sport of the popular Calumet. It's fine cut flower qualities make it a very worthwhile contribution to the garden class. Also worthwhile as a spring pot plant, using a delayed pinch	Med.	Oct. 10	4.50
P	**Arlora.** Beautiful, large, perfectly shaped blooms, well spaced on very rigid stems from well branched plants with bright green foliage. Flowers are bright lemon and fully double, excellent specimen plant. Useful as a spring and fall pot plant	Med.	Oct. 10	4.00
	Sweepstake. Pompon, secondary border; buff lemon	Med.	Oct. 12	4.00
	Goldfield. Large yellow pompon. Solid round blooms and semi-dwarf growth habit with good stem and foliage	Med.	Oct. 12	4.25
D	**Michigan** (NEW—DePetris). Large, clear yellow blooms fully 4 inches and larger across, produced on beautiful vigorous plants with rigid stems. Should be disbudded and supported due to size of bloom. Good outside cut flower when protected from frost	Med.	Oct. 12	4.50
	Moonbright. Soft moonlight yellow; large, perfectly incurved Chrysanthemum. Semi-dwarf habit, excellent foliage	Med.	Oct. 12	4.00

YELLOW GARDEN (Hardy) VARIETIES

Variety and Description	Height	Matures	Price 50 Only
P **Sunburst.** Large cactus type, 4 inches and larger when disbudded. Beautiful golden yellow blooms produced on vigorous plants with excellent foliage and stems. Should be supported since heavy rains and wind will blow the large blooms over	Med.	Oct. 12	$4.00
P **Gold Lode.** Medium reflexed, bright yellow. Early enough for garden use around Toledo and farther south. Responds excellently for spring garden pot plants, either disbud or spray	Med.	Oct. 15	4.00
Judith Anderson. Bright lemon button. Border	Med.	Oct. 15	3.75
Rodell Improved. Light lemon button. Background plantings and cut flowers	Med.	Oct. 15	3.65
Yellow Irene. Small light lemon button. Background plantings and cut flowers	Med.	Oct. 15	4.15
Buttercup (H). Large golden incurved. Background and cut	Short	Oct. 15	4.15
PD **Valiant.** Another large incurved. Light golden. Early enough for garden use. Responds well for spring pot plants. Should be disbudded	Med.	Oct. 15	4.00
P **Ohio State** (NEW—DePetris). Large golden cactus decorative. Luxurious dark green foliage. Compact and sturdy grower, lending itself well to disbudding or spring pot plant culture	Med.	Oct. 15	4.50
PD **Honeysweet.** Large incurved, golden yellow. Early enough for garden use and responds excellently for spring pot plants. Should be disbudded	Med.	Oct. 15	4.00
Sarasota. Bright lemon, medium pompon. Excellent cut flower variety for under glass or the early cloth house	Med.	Oct. 15	4.00
P **Iowa** (NEW—DePetris). Bright lemon, medium incurved. Makes a sturdy compact pot plant, especially useful in the spring months. Quite productive and beautiful as a garden disbud	Med.	Oct. 15	4.50

PINK & LAVENDER GARDEN (Hardy) VARIETIES

Gladness. Decorative pompon, China rose. Border	Short	Aug. 28	4.00
Cecil Beed. Decorative, secondary border, deep lavender	Med.	Sept. 1	3.75
Salmon Precose. Large decorative border; salmon pink	Short	Sept. 1	3.90
Amelia. Lavender pink cushion. Border	Short	Sept. 5	3.50
Rosa. Rose pink cushion. Border	Med.	Sept. 5	3.75
Dean Kay. Shell pink cushion. Border	Short	Sept. 5	3.50
Purple Star. Brilliant purple, decorative pompon. Secondary border	Med.	Sept. 5	3.75
P **Joan Helen.** Dark purple shading to crimson. Responds for spring pot plants. Very readily makes a beautiful plant. Color is good	Med.	Sept. 10	3.75
P **Nyes Favorite.** Large, shaggy decorative. Lavender. Responds for spring pots	Med.	Sept. 10	3.75
Barbara Small. Lavender pompon. Secondary border and cut	Tall	Sept. 10	4.00
P **Orchid Helen.** Medium decorative, orchid lavender. Responds for spring garden pot plants	Med.	Sept. 10	4.00
Successor. Silvery lavender decorative. Secondary border	Med.	Sept. 10	4.00
Lorenzo. Dark purple, quilled. Secondary border	Med.	Sept. 15	4.00
Royal Robe. Dark purple decorative. Secondary border	Med.	Sept. 15	4.00
Chippewa. Bright purple decorative. Secondary border and cut	Med.	Sept. 15	3.90
Violet. Bright purple decorative	Med.	Sept. 15	3.65
P **Purple Queen** (H) (NEW—Neal). Medium pompon; cushion type growth. Dark purple. Compact growth displaying huge masses of blooms	Short	Sept. 20	4.00
P **Purple Spoon.** Soft purple. Makes an attractive, compact, spring pot plant	Med.	Sept. 20	4.00
Tapestry. Decorative, secondary border. Salmon pink	Med.	Sept. 20	3.90
P **Purple Waters.** Deep purple. Responds well for spring pot plant culture	Med.	Sept. 20	4.00
Heather Bloom. Heather pink decorative. Secondary border	Med.	Sept. 20	3.75
Blanche Litwiller (NEW—Neal). Large, lavender pink pompon. Blooms are lavishly produced on good strong stems	Med.	Sept. 23	4.50
Pink Quill. Shell pink with solid centers. Large, decorative quill type	Med.	Sept. 25	4.50
Olive Longland. Apricot salmon pink decorative. Secondary border	Med.	Sept. 25	3.65
Evangeline. Large decorative, flesh pink. Secondary border	Tall	Sept. 25	4.00
P **Jeweltone.** Rose pink pompon. Secondary border or pots	Short	Sept. 25	4.00
P **Lady's Choice.** Ivory pink. Large decorative, secondary border or pots	Med.	Sept. 25	4.00
P **Reflection.** Decorative, secondary border, rosy lavender. Displays exceptional qualities for spring pot plants	Med.	Sept. 25	4.15
P **Petrisian Rose.** Medium pompon. Lavender rose in color, very versatile. Ideal as a garden cut flower. Very good under glass as an early cut flower and responds very well either as a cut flower or spring pot plant	Med.	Sept. 25	3.90

PINK & LAVENDER GARDEN (Hardy) VARIETIES

Variety and Description	Height	Matures	Price 50 Only
P **Cecelia.** Medium decorative purple flowers produced in abundance on beautifully shaped plants. Responds well as a spring pot plant	Short	Sept. 25	$3.50
Imp. Early Wonder. Lavender pink pompon; secondary border and cut	Med.	Sept. 25	3.90
Capt. J. Smith. Lavender pink cushion. Border plant	Short	Sept. 25	3.50
Evelyn Devaney. Shell pink	Med.	Sept. 25	4.00
Purple Cushion. Sport of Cecelia	Med.	Sept. 25	3.75
P **Major Cushion.** Small decorative lavender pompon, produced on a well rounded plant. Responds for spring pot plants, either as 6 inch or 3 inch pot mums. Temperature should be 60° or better	Short	Sept. 25	3.50
Coquette. Rosy pink cushion. Border	Short	Sept. 25	4.15
Edna Rowley (NEW—Neal). A beautiful button pompon with a ruby eye. A good variety for home arrangements and very showy in the garden	Med.	Sept. 26	4.50
Tuneful. Rose pink pompon. Large decorative blooms with darker centers; excellent for cutting in the home garden	Tall	Sept. 28	4.00
Stylish (NEW—Neal). Large cactus type decorative, old rose. Makes a beautiful showing in any garden. Outstanding for cut flower arrangements. This variety will highlight any garden	Med.	Sept. 28	4.50
Rosita. Light lavender rose button. Secondary border	Med.	Sept. 28	3.75
P **Joyous.** A very lovely spring pot plant. Lavender cushion, decorative. Compact and productive. Border	Short	Sept. 28	4.00
Malinda Brown. Lavender rose pompon. Secondary border and cut	Med.	Sept. 28	4.00
Betty. Pink, rose center, decorative. Background and cut	Tall	Sept. 28	3.75
P **Twinkle.** Cushion, border. Deep rose purple. Novel color for spring pots	Med.	Sept. 28	3.75
Pat. Lehman. Peach pink decorative. Background and secondary border	Tall	Sept. 28	4.00
P **Aristocrat** (H). Large, deep wine decorative. Secondary border. Useful as a large flowering spring or fall pot plant	Med.	Sept. 28	4.15
Artist Delight (NEW—Neal). Large, coral geranium pink decorative—perfect sprays for design work. An outstanding variety to accent a garden	Med.	Sept. 29	4.50
P **Spellbound.** Medium large decorative pompon. Excellent for spring and fall pot culture (medium treatment). Very pleasing lavender pink. One of the top two or three pink garden varieties for spring "no light, no shade" flowering	Med.	Oct. 1	3.65
Fascination. Large, decorative lavender pink. Secondary border	Med.	Oct. 1	4.00
Troubadour. Bright rosy crimson. Large blooms, 3 inches across	Med.	Oct. 1	3.90
P **Tiffany Rose.** Medium large, deep rose single; very prolific bloomer. Responds well for spring pot plants	Med.	Oct. 1	3.65
Old Lavender. Bright lavender, large flowered decorative. Background	Med.	Oct. 1	4.15
Sonny. Small salmon pink pompon; excellent cut flower, either under glass or in the garden. Also response is good in the early cloth house shadings	Med.	Oct. 1	3.75
Helen Bogue. Large, rose purple decorative	Tall	Oct. 1	4.50
Mayflower. Very hard solid pompon. Soft, luminous pink, borne atop perfect sprays and rigid stems. Excellent early cut flower	Med.	Oct. 1	4.00
Charm Spoon. Rhodonite rose spoon. Secondary border	Med.	Oct. 1	4.00
Alex Cummings. Deep rose pink decorative. Disbud and background	Tall	Oct. 3	4.15
Northern Queen. Large decorative. Rose pink, dark center. Good cut under glass or in the garden	Med.	Oct. 5	4.15
P **Petrisian Pink.** Light pink decorative. Background, cut	Med.	Oct. 5	3.90
P **Lavender Lady.** Lavender decorative pompons produced on a rather tall spreading growth. Responds well for spring pots	Tall	Oct. 5	4.00
Dream Girl. Light lavender pompon. Background and cut	Med.	Oct. 10	4.15
P **Courtier.** Lavender pink medium decorative. Good as garden cut flowers and responds well for spring pots	Med.	Oct. 10	4.00
P **Mischief.** Small daisy. Dark purple with contrasting yellow center, produced abundantly on short globose plant. A colorful novelty that lends iteslf to spring and fall pot plants (medium treatment). Tolerates 56°	Short	Oct. 10	3.90
P **Time.** Large, deep lavender rose pompons produced on strong stems. Good specimen plant in the garden when disbudded. Also responds for spring pot plants	Med.	Oct. 10	4.00
P **Orchid Spoon.** Orchid lavender spoon. Responds for Mother's Day and later as a pot plant novelty	Med.	Oct. 10	3.75
Rose Spoon. Lavender rose pink spoon. Secondary border	Med.	Oct. 10	3.90
Lassie. Deep pink; large decorative. Background and cut	Med.	Oct. 10	4.00
P **Masquerade.** Lavender pink button pompons with dark rose center. Responds well for spring pot plants	Med.	Oct. 10	3.90
P **Joybringer.** Salmon rose pompon. For borders and pot culture (short treatment) April 1-June 15 and September 1-October 15. Spreads well; short and compact	Short	Oct. 10	3.90

PINK & LAVENDER GARDEN (Hardy) VARIETIES

	Variety and Description	Height	Matures	Price 50 Only
	Titania. Large raspberry rose; tall vigorous growth habit for background plantings....	Tall	Oct. 12	$4.25
	Ronnie. Dark lavender button. Background and cut....	Med.	Oct. 12	4.00
	Allegro. Shrimp pink, cushion type. Secondary border and background....	Med.	Oct. 12	4.00
	Adagio. Raspberry rose pompon. Background....	Tall	Oct. 12	4.00
P	**Fuchsia Fairy.** Small light pink decorative. Compact, globose growth habit similar to Cushion varieties. Spring and fall pot plants (medium treatment). Color improvement over Major Cushion as a foreground garden variety. Tolerates 56°....	Short	Oct. 14	4.15
P	**Cupid.** Small pink decorative. Unique dahlia form. Prolific. Dwarf, masses and spreads as a garden variety. Disbud for pot plants (short treatment). Spring and early fall....	Med.	Oct. 15	4.15
P	**Jewell.** Lavender pink button pompon. Needs very little introduction, an old timer that is very versatile for either cut flowers under glass or in the garden and the early cloth house. Responds as a spring pot plant....	Med.	Oct. 15	4.00
	Mayfair. Medium large, smooth pink daisy. For cut in the greenhouse. Outstanding production. May 1 to mid-July and October 1-15....		Oct. 15	4.15
PD	**Citation.** Medium large, mauve pink pompon. A pot plant disbud (medium treatment) April to mid-June and September-October. One of the best late garden varieties. Tolerates 56°....		Oct. 15	4.15
	Enterprise. Medium large, deep pink pompon. Excellent substance. Outdoor cut flower. Cloth house July 15-August 15. Greenhouse May-early July and October....	Tall	Oct. 15	4.15
	Light Pink Enterprise (NEW—Neal). Light pink sport of Enterprise....	Tall	Oct. 15	4.50
	Elizabeth Hood. Large, light orchid pink pompon. Garden backgrounds....	Med.	Oct. 15	4.00
P	**Alert.** Medium large, intense purple decorative. An impressive color for spring and early fall pot plants (medium treatment) April to mid-June and September-to mid-October. This is the Humdinger of the garden varieties....	Med.	Oct. 14	3.75

BRONZE & RED GARDEN (Hardy) MUMS

	Glow Worm. Orange scarlet, semi-double cushion. Border....	Short	Sept. 8	4.00
	Early Harvest. Mahogany orange cushion. Border....	Short	Sept. 8	4.25
	Harbinger. Large, golden bronze decorative. Border....	Short	Sept. 8	4.15
	Autumn Song. Wine rose, decorative. Secondary border....	Med.	Sept. 10	3.75
	Geo. Luxton. Light bronze. Large decorative; secondary border....	Med.	Sept. 12	4.00
	Bronze Pomponette. Pompon, border, golden bronze....	Short	Sept. 15	4.25
	Early Crimson. Bright crimson decorative. Secondary border....	Med.	Sept. 15	3.90
	Apache. Large decorative, red and gold. Secondary border....	Med.	Sept. 15	4.00
	Early Bronze. Orange bronze button. Border....	Short	Sept. 15	3.75
	Red Gold. Red and gold button. Border....	Med.	Sept. 15	3.90
	Dark Red Gold. Dark red sport of Red Gold. Button....	Med.	Sept. 15	3.90
	New Marjorie Mills. Ruby red, large pompon. Border....	Short	Sept. 15	4.25
	Chippa Red. Large, maroon red decorative. Secondary border and cut....	Med.	Sept. 15	3.90
	Flamboyant. Decorative, flaming orange bronze. Secondary border and cut....	Med.	Sept. 15	4.00
	Early Kathleen. Coppery bronze decorative. Secondary border....	Med.	Sept. 15	4.15
	Companion. Reliable early bloomer with good stems for home cutting. Fully double, golden bronze....	Med.	Sept. 15	4.15
	Autumn Beauty. Chestnut red decorative. Secondary border....	Med.	Sept. 15	4.00
	Sept. Bronze. Golden bronze button. Secondary border....	Med.	Sept. 20	3.75
P	**Bronze Queen** (H) (NEW—Neal). Copper bronze cushion pompon type. Compact and showy, it makes a beautiful low border planting or yard specimen....	Short	Sept. 20	4.00
	Red Glow. Dark red, small pompon. Secondary border....	Med.	Sept. 20	3.90
P	**Orsona.** Reddish bronze pompon, responds well for spring garden pots....	Med.	Sept. 20	4.00
	Scarlet Crimson. Decorative, bright red. Secondary border....	Med.	Sept. 20	3.90
	Mme. Cadillac. Raspberry wine, large pompon. Border....	Short	Sept. 20	3.90
	Rouge Cushion. Bright red cushion. Border....	Short	Sept. 25	3.90
	Bronze Wonder. Rosewood bronze pompon. Secondary border and cut....	Med.	Sept. 25	3.90
	Plainsman. Decorative, secondary border. Orange bronze....	Med.	Sept. 25	4.00
	Crown Jewell. Bright red decorative. Secondary border....	Short	Sept. 25	4.00
	Champ. Cushion. Deep bronze cushion. Border....	Short	Sept. 25	3.50
	Comd. Cushion. Red cushion. Border....	Short	Sept. 25	3.50

BRONZE GARDEN (Hardy) VARIETIES

	Variety and Description	Height	Matures	Price 50 Only
	Alpena. Dark red decorative. Secondary border	Med.	Sept. 25	$4.00
	Mahogany Cushion. Jasper red cushion. Border	Short	Sept. 25	3.50
	Elite Cushion. Salmon bronze cushion. Border	Short	Sept. 25	3.50
	Holiday (H). Golden bronze, large decorative. Secondary border and cut	Med.	Sept. 25	4.00
	Football Bronze. Buff bronze	Tall	Sept. 25	4.15
	Coppersmith. Copper bronze decorative pompon	Med.	Sept. 25	4.15
	Mojave Gold (NEW—Neal). Huge golden bronze with disc-like flowers	Med.	Sept. 26	4.50
	Crowning Glory. Coral bronze	Med.	Sept. 28	4.00
	Kathleen Lehman. Orange bronze, large decorative. Secondary border	Med.	Sept. 28	4.00
	Admiration. Salmon fawn decorative. Secondary border	Med.	Sept. 28	3.75
P	**W. P. Snyder.** Medium large decorative. Apricot bronze. For garden and pot culture (short treatment) April-May and September-October 15. Requires 60° minimum temperature	Med.	Oct. 1	4.00
P	**Caprice.** Large, full, decorative 4 inch blooms, having a good deep apricot bronze color. Strong, bushy, semi-dwarf growth with excellent foliage. Useful as a spring and fall pot plant	Med.	Oct. 1	4.15
P	**Iron Mountain.** Deep red pompon changing to rust. A very beautiful red when first open, fades rapidly. Responds very sharply for spring pots. Well suited for Valentine's Day	Med.	Oct. 1	3.90
	Jubilee (H). Crimson red pompon. Secondary border	Med.	Oct. 1	4.00
	Fiesta. Orange rust pompon. Secondary border; good for cut	Tall	Oct. 1	3.90
	Red Cloud. Scarlet red cushion. Border	Med.	Oct. 1	3.65
	Red Riding Hood. Bright red decorative. Secondary border	Med.	Oct. 1	3.90
	Sam Williston. Deep red cushion. Border	Short	Oct. 1	3.50
	Leshara. Mulberry red decorative. Novelty. Secondary border	Med.	Oct. 1	3.75
	Bonfire. Bright red decorative. Secondary border	Med.	Oct. 1	4.15
	Fire Engine. Flaming red single. Secondary border	Med.	Oct. 1	3.75
	Cardinal Spoon. Red bronze spoon type. Secondary border	Med.	Oct. 5	4.15
P	**Aglow.** Orange bronze pompon. Small flower. Low, compact growth. Spring and fall pot plants (medium tall treatment) April-May and September-October 15	Med.	Oct. 5	4.15
P	**Remembrance.** Medium large, carmine red pompon; compact growth. For garden and pot culture. Best with 60° minimum temperature. One of the top several garden varieties for spring pot flowering	Med.	Oct. 5	3.75
	Lipstick. Ruby orange cushion. Border	Short	Oct. 5	4.25
	Firecracker. Mahogany bronze decorative. Background and cut	Tall	Oct. 5	4.15
	Cydonia. Mahogany bronze decorative. Background and cut	Tall	Oct. 5	3.75
P	**Sept. Cheer.** Cherry red single. Low growing, responds well for spring pots	Med.	Oct. 5	3.65
	Huntsman. Red bronze decorative. Outdoor cut flower. Showy, dependable. Background garden variety	Tall	Oct. 5	4.15
	Burgundy. Wine red, large pompon. Background and cut	Tall	Oct. 5	3.75
	Ruby Pompon. Pompon, secondary border, ruby crimson	Med.	Oct. 5	3.75
P	**Mona.** Very hard, intermediate rust bronze pompon. A variety for border and pot culture. Medium treatment April-May and September-early October	Med.	Oct. 5	4.00
	Indian Red. Indian rust color, unique type flower	Med.	Oct. 5	4.15
	Courageous. Decorative. Dark ruby red. Secondary border	Med.	Oct. 5	3.75
	Aviator. Pompon, secondary border. Copper bronze	Med.	Oct. 8	4.00
	Success. Large pompon, disbud, secondary border. Deep crimson red	Med.	Oct. 8	4.00
P	**Toronto.** Medium orange-bronze decorative. Excitingly beautiful in the garden. Prolific bloomer and spreading cushion type growth. Attractive spring and fall pot variety (medium treatment)	Short	Oct. 10	4.15
	Orangeade. Intermediate daisy, orange bronze. Compact, prolific garden variety	Med.	Oct. 10	4.15
	Gladiator. Large, 4 inch, full decorative orange red blooms produced on plants of medium height with upright stems and good foliage. Try disbudding this one	Med.	Oct. 10	4.15
P	**Red Velvet.** Medium large, crimson red decorative	Med.	Oct. 10	4.15
P	**Dark Calumet** (NEW—Neal). Bronze sport of the widely used Calumet, useful for spring pots or cut	Med.	Oct. 10	4.50
P	**Dolli-ette.** Medium large, golden bronze spoon. A shapely pot plant (medium tall) April-May and September-early October. Fine foreground garden variety	Med.	Oct. 10	4.15
P	**Carnival.** Large pompon. Glowing orange red. Strong. Background garden variety	Med.	Oct. 10	4.00
	Carmine Queen. Carmine red pompon. Outdoor cut flower	Tall	Oct. 10	4.15
	Northwestern (NEW—DePetris). Large, full bronze incurved variety with good substance. Makes an ideal football Mum	Med.	Oct. 10	4.50

BRONZE GARDEN (Hardy) VARIETIES

	Variety and Description	Height	Matures	Price 50 Only
P	**Indiana** (NEW—DePetris). Large, full cactus type, amber bronze in color. A real novelty for the home gardener. Has commercial value for its adaptability as a spring pot plant	Med.	Oct. 10	**$4.50**
P	**Morocco.** Dwarf cushion type growth producing 3½ inch blooms in large quantities on well shaped plants. Reddish bronze. Attractive as a spring and fall pot plant	Short	Oct. 12	**4.15**
P	**Mrs. DuPont.** Large, buff apricot decorative. Tolerates 56°. Pot plant (medium treatment) spring-early fall	Tall	Oct. 12	**4.15**
P	**Coralhue.** Small apricot coral pompon. Low, spreading growth habit. Free breaker. Spring and fall pot plant (short treatment). Effective as a foreground garden variety. More double and prolific than Joybringer	Short	Oct. 12	**4.15**
	Admiral. Dark red pompon, background and cut	Med.	Oct. 12	**4.00**
P	**Purdue** (H) (NEW—DePetris). Large, full incurving, lively bronze. Sturdy and compact by nature, lending itself beautifully to pot plant culture. Ideally suited for background plantings	Med.	Oct. 12	**4.50**
D	**Crusader.** Large, double crimson red blooms, 4 inches or more, larger when disbudded. Produced on strong robust stems with very strong flower petioles. An outstanding specimen variety when disbudded for the late Mum garden or as China Mum	Med.	Oct. 12	**4.15**
PD	**Calumet.** Apricot bronze pompon of superior flower quality for cut flowers. Fine for spring crops in the greenhouse and early cloth house. Excellent at natural season. Tolerates 56°	Med.	Oct. 15	**4.00**
P	**Radiance.** Medium red decorative. Breaks freely. Responds uniformly. Non-fading color. Pot plants spring-early fall (medium treatment)	Med.	Oct. 15	**4.00**
P	**James Stewart.** Apricot gold pompon. Responds with Norona in the early shadings. July cloth house, natural cut flower for greenhouse and outdoors	Tall	Oct. 15	**4.00**
PD	**Majestic** (NEW—DePetris). Medium incurved bright rosewood bronze pompon. Responds beautifully to spring or fall pot plant culture. Improved by disbudding, either in pots or in outdoor specimen plantings	Med.	Oct. 15	**4.50**
	Red Enterprise (NEW—Neal). Rose red, medium pompon	Tall	Oct. 15	**4.50**
PD	**Resolute.** Large bright red, compactly incurved, suitable for disbudding, semi-dwarf, compact. Desirable as a spring pot	Med.	Oct. 15	**4.50**
	Wisconsin (NEW—DePetris). A large solid, very formal incurved, rich deep apricot bronze in color. Especially adaptable for cut flower disbuds and garden work	Med.	Oct. 15	**4.50**
	Rajah. Large scarlet red daisy. Natural cut flower outdoors and greenhouse. Background garden variety	Tall	Oct. 15	**4.15**
D	**Chopin.** Large incurved disbud, background. Light bronze	Med.	Oct. 15	**4.15**
	Helma. Large, rich red, semi-incurved, good stem and excellent foliage	Med.	Oct. 15	**4.50**
	Talisman. Talisman bronze, medium large daisy. Recommended in the greenhouse mid-April to July. Also early cloth house in normal season		Oct. 20	**4.15**
PD	**Andante.** Intermediate decorative disbud. Apricot-bronze. Habit well adapted to pots from mid-April through October, medium treatment. Its color remains smooth under both cool and warm finishing temperatures	Med.	Oct. 25	**4.50**

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Note carefully instructions for ordering on page 8. No orders for less than 50 rooted cuttings of a variety accepted. Minimum total order, 500 cuttings.

50 only	**$3.15**	**$3.25**	**$3.40**	**$3.50**	**$3.65**	**$3.75**	**$3.90**	**$4.00**	**$4.15**	**$4.25**	**$4.50**
100-250 per 100	**6.00**	**6.25**	**6.50**	**6.75**	**7.00**	**7.25**	**7.50**	**7.75**	**8.00**	**8.25**	**8.75**
300-450 per 100	**5.75**	**6.00**	**6.25**	**6.50**	**6.75**	**7.00**	**7.25**	**7.50**	**7.75**	**8.00**	**8.50**
500-950 per 100	**5.50**	**5.75**	**6.00**	**6.25**	**6.50**	**6.75**	**7.00**	**7.25**	**7.50**	**7.75**	**8.25**
1000-up per 100	**5.25**	**5.50**	**5.75**	**6.00**	**6.25**	**6.50**	**6.75**	**7.00**	**7.25**	**7.50**	**8.00**

SPECIAL COLLECTION of GARDEN VARIETIES

For growers who are not familiar with Garden Varieties, but who want a well-balanced assortment, we offer the following collections, which include the better varieties.

COLLECTION #1	COLLECTION #2	COLLECTION #3	COLLECTION #4	COLLECTION #5
Taller varieties for cutting.	**For bedding or borders.**	**50% for cutting; 50% for bedding.**	**For Easter, Mother's Day or Memorial Day pots. (state which)**	**Cushion Varieties Only.**

Prices above 5 collections, each: 300 to 450 cuttings, **$6.00** per 100; 500 to 950 cuttings, **$5.75** per 100; 1000 or more cuttings, **$5.50** per 100. Minimum collection, 300 cuttings. More than 300 cuttings must be ordered in units of 50.

On Growing Good Mums

SOILS FOR MUMS

Good Mums are grown in the heavy soils of our Midwest, the sandy soils of Cleveland, or in the clear sands of Florida. Which nicely proves the point that there is no one type of soil that Mums require. There are some rules of soil **management** that are quite important. Most important of these is the matter of humus. A hard poorly aerated soil just won't grow good Mums. A good Mum soil should have a loose open texture. When water is applied, it should soak into the soil, not run off. It should be possible to push one's fist down into a bench of Mum soil. A good Mum soil won't crack as it dries.

Most any reasonably good field or garden soil can be made into this kind of a porous open growing medium by additions of humus. Peat will do it, manure too—and some growers get humus by using sod rotted down.

Field Soils

Where new benches are being filled, or where soil is changed annually, outdoor field soil must be used. Any good field soil that has been growing good farm crops can be brought into the bench, 1½ inches of peat or other humus added, the soil steamed, and it will be ready to plant. Better results are often obtained if the land to be used is planted to a cover crop several years in advance of its use. Rye or Blue Grass are both excellent. It takes about two years to build up organic matter in soils in this way—and the amount of humus won't increase much after that. Fertilize the cover crop regularly. Post recommended 800 lbs. of 5-10-10 per acre the first year if no manure is used. After that, 200 lbs. of ammonium sulfate per acre applied each spring is recommended. Acidity must be checked, lime added if necessary. Tops are cut each year at the bloom stage.

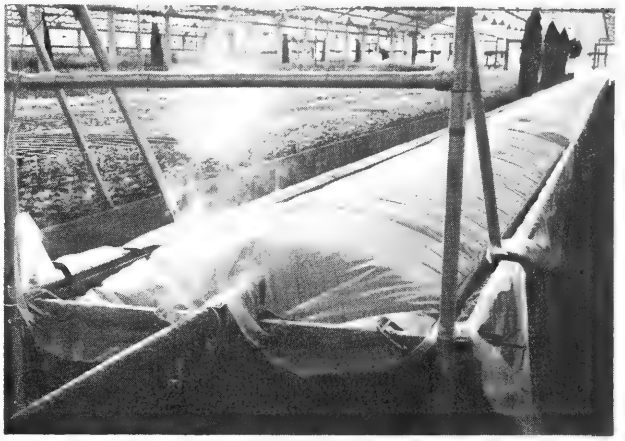
Such cover crops should be turned under about one month before soil is needed in the bench. Since rotting of the roots etc. in these soils tends to take up available nitrogen, it is important to watch nutrient levels the first few months such soils are in the bench. Manure or peat may be added just before plowing field soils under—and will help in many cases.

Re-using Greenhouse Soils

The majority of cut flower growers now keep their bench soils in more or less permanently. It is almost standard practice to steam the soil annually. Humus is maintained by regular additions of peat, or sometimes well rotted manure, or both. Nutrients are supplied usually in liquid form, or sometimes dry.

By and large the system works well. It saves the tremendously expensive task of wheeling out hundreds of yards of soil during the hot summer weather. It eases the ever increasing problem of finding good fresh topsoil. A sterilized soil is free of weeds, soil-borne insects and diseases. With modern methods, steaming is really not too much of a job. Many year round Mum growers now steam all beds twice yearly.

Several points should be watched. Most important is to insure that adequate humus—peat—is added. Most soils will benefit from about 1 inch of peat—(domestic or imported) annually. Peat can be overdone—resulting in a soil that stays too wet, aerates poorly. Mums won't grow in a peat bog. But, more often the error is the other way.



Steaming soils for year round Mums at West Chicago. Many growers steam twice or even three times yearly on year round Mum production. It seems to make for better growth.

Some growers add the peat as a mulch on cuttings benched in warm weather.

Another point worthy of mention here: somewhere there is a limit to the number of years a soil can be re-used. This tends to become a problem quicker where one crop is grown continuously. We have all noticed that some of the very best crops of Mums—and other flowers—came from the first use of fresh outdoor soil. It's hard to put a limit here—five or six years of continuous cropping with Mums might bring the grower close to trouble. Try half a bench of fresh soil—do they grow better?

About Sterilizing Soils

Steam is pretty generally used under glass.

A surprising number of growers are still going at this task the hard way. Some growers are still buying tiles or conduits. A completely satisfactory job of steaming can be done without burying anything. Briefly here is the procedure:

Generally, the peat or humus is added first. This is plowed into the soil, to a depth of 6 to 8 inches on ground beds or to the depth of the bench on raised benches. Next the conduit is laid down the bench—some means of conducting the steam from end to end. By far the easiest to handle and most efficient in our experience is the thin walled canvas hose—5 or 6 inches in diameter. A 150 ft. roll can be carried under your arm! Some difference from the heavy pieces of metal conduit. Source for the canvas hose: Pike's Peak Greenhouses, Inc., 519 E. Columbia Street, Colorado Springs, Colorado.

Next a thin plastic sheet is laid over the bench, weighted down at the sides with pipe, etc.—or fastened to the side wall of a raised bench with strips of wood held in place with "C" clamps. Steam is then turned into the conduit until the coldest point is heated to 180° for 30 minutes. Preparation of the bench after tilling should take no more than half an hour for two men.

The cover is removed promptly after steaming. Then (once a year) 4 to 5 lbs. of 20% superphosphate are added. Where after-steaming troubles tend to appear, 3 to 5 lbs. of gypsum is also added. As a further precaution, some growers

ON GROWING GOOD MUMS

Bill Gunesch (Park Floral Company of Englewood, Colo.) is one of those fellows who is never content to grow the same thing the same old way. Here is an interesting crop of Indianapolis disbuds that we saw on March 20—and which Bill seemed rather pleased with. They were grown 4 x 6 inches, 2 stems per plant, six plants per square foot. This will produce a little under a dozen flowers per foot—allowing for some loss. Schedule: 13 weeks plant to flower, 4 crops a year. Bill figures at least $1.50 after commission which on the basis of four crops a year, he feels is profitable.

leach the soil quite heavily at this time—up to 5 gallons per sq. ft. This may be applied in one continuous irrigation if some sort of nozzle irrigation system has been installed. Otherwise, several heavy waterings all one day may be applied.

For more complete notes on steaming greenhouse soils, write for our booklet on the subject—no charge.

A few words on those after-steaming troubles. They are due to a variety of disturbances that, of course, result from steaming. Most typical is build-up of ammonia and nitrites which cause root tips to brown off. About 3 to 3½ weeks after steaming, plants will wilt, gradually at first, in some cases quite severely, even enough to kill the plant. Ammonia and nitrites (not nitrates) show fairly high on soil tests. The gypsum and leaching described above help. Since the trouble is most common in hot weather, steaming during cool season helps. Where the trouble appears, about all that can be done is to cultivate deep and carry the beds on the dry side—to help aerate the soil.

Chemical Sterilizing

If steam is impossible, chemical sterilizing is a lot better than nothing. If chemicals are used: **Chloropicrin** (tear gas) does the most effective job of killing disease organisms. However, plants are very sensitive to it—must not be used in a house where plants are growing. Also, takes some days for all gas to escape from soil. Not as dangerous to growers because of the strong odor. Trade name: **Larvacide.**

Methyl Bromide: less effective in killing disease organisms, but far less prone to injure plants. Clear Methyl Bromide can be used in a house with other plants with normal precautions. Methyl Bromide is more dangerous to growers since it has no strong characteristic odor. MC2 is Methyl Bromide with a small per cent of Chloropicrin as a warning agent—but also enough to injure plants.

FERTILIZER AND GOOD MUMS

Mums, being a heavy leafy plant, tend to be heavy feeders, especially mature plants, and during the seasons of active growth (summer-fall). However, it is just as easy to overdo on feeding as it is to cut them too short.

It is difficult to offer any suggestions on how much of what type of fertilizer to apply—and when. The only answer to this question is a soil test. Roughly the following nutrient levels should be maintained, in our experience:

Nitrates	20-40	parts per million, Spurway
Phosphorous	3-5	parts per million
Potash	20-40	parts per million
Calcium	150-250	parts per million
pH	6.4-7.0	

Solu-Bridge reading (1 to 5 dilution) not over 70.

In general it is desirable to start out newly planted cuttings at levels somewhat below those given above. However, even the newly planted cutting must have nutrients.

Few growers actually do their feeding strictly according to soil tests. The more common practice is to set up a regular feeding routine that from previous experience is known to be about adequate. Then the benches are "spot checked" by means of soil tests every month or two. The feeding program can then be adjusted if nutrients are found to be too low or too high.

Methods of Application

Most common, least labor, and definitely better in terms of plant response in our experience, is liquid application. This can be done either by installing stationary tanks and piping the dilute fertilizer directly to the plants—or by various mechanical equipment. An ordinary 10 or 20 gallon insecticide sprayer can be used. A stock solution is made up of 2 lbs. of Kapco 25-0-25 per gallon of water for example. One quart of this stock solution is poured into the tank of a 20 gallon sprayer—after which it is filled with water. The insecticide nozzle is removed from the end of the applicator, the pressure set down to maintain about 20 lbs. This 20 gallons will feed 200 sq. ft. in about 5 minutes.

We have had favorable results for several years now with a new proportioning type of injector from Smith Precision Products Company, 1135 Mission Street, South Pasadena, California. This unit injects liquid fertilizer concentrate (or stock solution) into a water line (1 to 100) in proportion to the amount of water that is taken from the line. It is entirely automatic. With this equipment, a man can fasten a hose to this fertilizer line, draw out water to which the liquid feed has been injected—and apply it directly to the crop. One unit will serve two men each with a ¾ inch hose. Cost about $400. We have been preparing our stock solution as follows:

Use a clean 50 gallon barrel. Dump 75 lbs. of 25-0-25 (Kapco) and 25 lbs. of ammonium nitrate into the barrel. Then add water enough to fill the barrel. This will make 50 gallons of stock solution—at roughly 2 lbs. of dry fertilizer per gallon of water. If nitrates tend to run too high on soil tests, omit the ammonium nitrate. Use 100 lbs. 25-0-25.

If pH runs too high, use ammonium sulfate instead of ammonium nitrate.

During the brighter seasons of the year, most of the waterings our Mums receive (both pot and cut flower) have

been with this dilute fertilizer. They are actually fed 2 or 3 times weekly. With very little exception, this procedure has maintained the nutrient levels in our soils within the limits prescribed above. Phosphorous is supplied in adequate amounts by the once a year addition at sterilizing time. Calcium the same. If nitrogen, for example, tends to run too high on a series if soil tests, the stock solution can be varied to correct this.

Actually, we combine this automatic feeding device with automatic watering—with the Hoseboye reel type watering machine. The Hoseboye inlet hose is fastened onto the fertilizer line. The machine does the feeding and watering—leaving the grower free for other tasks. Liquid fertilizer injection can, of course, be teamed up similarly with most other automatic watering devices.

There are various other types of mechanical equipment available for fertilizer injection. Many are of the non-proportioning type—somewhat less expensive. For more on this type of equipment, see GROWER TALKS, September, 1955, page 14. In the May 1954 issue, page 5, will be found full directions for use of all common fertilizers in liquid form—dilutions, etc.

Many good growers feed Mums in dry form. Here are materials commonly used, strength, rate of application:

Nitrogen Carriers	**Rate of Application**
Ammonium sulfate (20% nitrogen)	1 lb. per 100 sq. ft.
Ammonium nitrate (30% nitrogen)	½ lb. per 100 sq. ft.
Sodium nitrate (15% nitrogen)	1 lb. per 100 sq. ft.
Phosphate Carriers	
Superphosphate 20% (20% phosphate)	5 lbs. per 100 sq. ft.
Superphosphate 40% (40% phosphate)	3 lbs. per 100 sq. ft.
Potassium Carriers	
Potassium sulfate (48% potash)	1 lb. per 100 sq. ft.
Potassium chloride (48% potash)	1 lb. per 100 sq. ft.
Miscellaneous	
Calcium sulfate (gypsum) furnishes calcium but does not raise pH	5 lbs. per 100 sq. ft.
Calcium oxide (ground limestone) to raise pH of soils	2 to 4 lbs. per 100 sq. ft.
Wettable sulfur—to lower pH or soils	1 to 3 lbs. per 100 sq. ft.

There are, of course, complete fertilizers in dry form. Such materials as Vigoro, Armour's Florist's Mixture, etc. are much used. Generally they carry an analysis of around 5-10-5, in some cases higher in nitrogen. In the absence of any tests, a Mum crop that seems to need fertilizer will normally need several applications of this type of material, around 2 lbs. per 100 sq. ft. each time, starting soon as the plants are in active growth.

Some Cautions on Feeding

First, as any grower experienced in the northern dark winter country knows, both feeding and watering must be drastically reduced during dark weather. As a very general guide, Mums on a ground bed in midwinter will need perhaps 1/5 as much of both fertilizer and water as the same crop in midsummer. Of course, the crop should not be allowed to wilt—nor should it be starved for nitrogen. But it will need so much less of both water and feed during the short sunless days of January that, with reasonable care, this shouldn't happen.

In general, fertilizer should not be applied to a dry soil. Better water lightly first, feed, then soak well.

A problem sometimes associated with feeding (overfeeding) is an excess of soluble salts in the soil. We are concerned here with an excess of the **total of all soluble salts** in the soil. The soil solution simply becomes so concentrated that roots cannot take up moisture. Solu-Bridge readings will indicate quite accurately whether total salt concentration is too high. Where do these salts come from? Usually from a very hard water that constantly adds salts, and from heavy fertilizing. Cure: leaching 3 to 5 gallons of water per sq. ft. If the problem is too serious it may be more practical to change soil.

WHEN TO BENCH CUTTINGS (for normal flowering)

For a safe rule, bench cuttings directly to the flowering bench 3 weeks prior to the pinch dates shown throughout this list. Especially on the November-December flowering crops, many growers plant only two weeks prior to pinch dates. Growing conditions must be favorable if adequate stem length is to be achieved. It is possible, especially on the late December crops, to bench cuttings just before or on the pinch date, pinch in two weeks. Somewhat shorter stems will result, but with good flowers. Another possibility is to plant cuttings closer (6 x 4 inches) on the pinch date, allow them to grow no pinch. Normal stem length and fine flowers will result, but more cuttings are required.

DIRECT BENCH CUTTINGS!

It gives so much more rapid growth than any other way of handling them—and it's so much less work besides. We have direct benched nearly all of our Mums for several years; losses even in hot weather have been negligible.

However, it's one of those operations that must be done right. The rules are simple, easy to follow, but failure on any important point can mean real loss. Here are the "rules" that we follow.

Nutrient levels must be low to medium, especially nitrogen and potash. Too high levels will burn roots; too low starves the plants. Occasional Solu-Bridge tests will tip you off to excesses of salts. Tender roots of new cuttings aren't very tolerant!

Peat. Soil should not be hard! We add 10 to 25% by volume yearly. Other kinds of humus are O.K. if free of harmful salts, etc.

Steaming. We have for several years made it a rule to **steam all beds the day prior to benching of cuttings.** Many other growers follow this practice on Mums and other crops. Where peat has been applied and where salts are at reasonable levels, it will work almost 100%. Somehow the cuttings take off exceptionally well in the newly steamed soil—even if it's still warm.

Under some soil conditions, if soils are steamed just before benching, and if hot weather follows, certain "after steaming" troubles appear. Usually it's a build-up of ammonia that appears 3-4 weeks after steaming. It burns roots, can even kill plants. Best suggestion where this is encountered: Steam all benches just prior to benching except those benched in summer. These beds may be left unsterilized—or may be treated with Terraclor (75% wettable powder) at 1 to 1½ lbs. per 1000 sq. ft. of soil. The material is raked into the top 2 inches of soil just before planting cuttings. It helps especially in control of Rhizoctonia (root rot).

Bone dry soil. Tender roots of new cuttings planted in bone dry soil will wither and die. Soil must be medium moist.

ON GROWING GOOD MUMS

Plant shallow. Mum cuttings must be set just as shallow as possible. Even if a few are knocked over by the first watering, they can easily be set up again. Setting the root ball down 2 to 3 inches deep will guarantee a slow start—and often trouble with rotting of cuttings. Firming soil before planting helps keep 'em shallow.

Watch your planting crew. It's **so** important!

About misting. Where cuttings are direct planted in hot weather, it is very important that they be misted—sprayed overhead lightly—3 or 4 times on the first few days. Keep the foliage moist.

Cold storage of cuttings. If cuttings have been stored at a low temperature, be sure to warm them up gradually—12 hours at room temperature is best—before setting them in a hot greenhouse. Incidentally, storage, even under ideal conditions, doesn't improve a cutting. Plant just as soon as possible after receiving the cuttings! If they must be stored, do so as near 32-36° as possible.

Exposure of roots. Those little roots on a cutting are **delicate.** Five minutes exposure to strong sun will wither them. Watch planting crews to be sure they don't take a lot of cuttings out of the boxes, lay them out along the bench for the planters. It can spell disaster.

Plant a good cutting. Whether it's Mums or Carnations or what have you, it's hard to make direct benching work unless the cuttings are good ones. That means 4 to 6 inches long, husky yet succulent (brittle), roots 1 to 1½ inches long. A weak cutting just won't make it.

Dan Ziegler, of Hatfield, Pennsylvania, is probably most noted as a Geranium man. However, he plants much of his place in Mums in the fall, and like the Geraniums, does them very well. Here's a bench of Giant Betsy Ross, flowered on disbud schedules, just coming into cut at the time of our visit, August 20. The bulk of the Mum crop here is Standards, flowered from September through January. Dan is one of the very few growers who keeps accurate cost and return records of his greenhouse crops—for the past several years. They are opening his eyes (as they always do). Example: A bench of 3 inch garden Mums flowered in May (no shade, no light) showed the highest percent of profit for any crop on the place.

PINCHING—AND TIME PINCHING

Time pinching simply means pinching plants on the pinch date given in this catalog. See variety lists. To have normal (fall) Mums ready to pinch on the catalog pinch date, plant cuttings about two weeks prior to that date. Then pinch on the date given in this guide.

Pinching on the correct date generally assures pompons with good, open spray formation. Standards pinched on the correct date will not usually throw crown buds—thus eliminating dog-leg necks.

Single stem: ordinarily produce good spray formation if cuttings are planted on the catalog pinch dates.

Softly, Please

You'd be surprised how much better results you'll get by just pinching out the top ¼ to ½ inch. Pinching down hard means that new shoots must come from old, hard wood.

"DISSPRAY"

Partial disbudding can do wonders to improve quality of certain varieties of pompons—at certain seasons. The problem is, of course, that the spray tries to produce too many buds—so many that none of them can develop into good sized flowers. Removal of part of these buds is "disspray" procedure. You'll find the word in descriptions of many varieties in this **Guide.**

How to do it? As soon as the buds have separated enough so that individual buds can be removed conveniently, go thru and remove all but four or five buds, leaving the best 4 or 5 nearest the top of the spray. Then, to finish the job, the side shoots or "suckers" along the stems just below these five flowers should also be removed.

Some varieties at certain seasons (winter usually) tend to produce a clubby or too tight spray. The peduncles fail to elongate enough. Removal of the center bud as soon as convenient to handle it will help this problem.

If you haven't been doing this partial disbudding, pick out a bench that's throwing too many buds, "disspray" a few plants. You'll be surprised at the results.

SUPPORTING THE EASY WAY

One layer of wire-cross strings will support any ordinary bench of pompons or standards. The one layer must be moved up every week or two, but if properly set up it takes only minutes.

Better than this, though, is the use of wire mesh. Already in general use among western and southern Mum growers, it seems to be quite practical. Between crops it is raised overhead out of the way for plowing, etc.

Wire mesh eliminates

1. Unrolling and stretching individual lengths of wire;
2. Winding them up after the crop;
3. Stringing, too!

CLOTH HOUSE ANGLES

Top quality pompons are flowered under cloth from August 1 into October—if frost protection is available. Pointers:

1. Schedules—the regular tables apply.

2. Diseases are something more of a problem than under glass. The preventive spray outlined on page 59 will keep them clean ordinarily, though.

3. Cloth. Cotton or Aster cloth is more effective in keeping leaf hoppers and small insects out than plastic (Saran). The Saran is more expensive but will last many seasons.

If Saran is used, specify amber—**not** the green. The green makes too much shade—reduces production.

4. Cloth house construction—for full details see our BALL RED BOOK, Ninth Edition, page 96.

Varieties

Based on a cross section of cloth house crops across the Midwest and East this past fall, here are the topnotchers:

Whites. Best and most reliable: Iceberg, Whitetop, Pristine, Illini Igloo. Whitetop is at its best after mid-September. Pristine is excellent for late August, early September. Iceberg is excellent all the way!

Other whites for cloth house: Encore, (poor breaker at times, but lovely), Shasta (tops if you don't ship), Alaska (for warm weather), Keepsake, Pinocchio, Freedom, and Pacesetter (daisies).

Yellows. The best in our experience: Yellow Iceberg, Yellow Beauregard, Golden Chord, Forty-Niner, Gold Coast, Yellow Igloo. Golden Chord and Forty-Niner are best after mid-September.

Other good yellows: Yellow Shasta, Lollipop, Aztec, Starbright, Golden Herald.

Pinks: Bluechip and Portrait clearly dominate the pinks. Bluechip used more than Portrait except for later (Oct.). Excellent bright colors, large flowers that ship well, good producers.

Other pinks: Masterpiece, Taffeta, Bonnie, Almega, Pennant, Memorial. Daisies: Reward, Mayfair.

Bronzes: The "big four": Rubicon, Beauregard, Thelma, and Magician. Rubicon and Beauregard are both excellent more or less throughout the season. Thelma is a wonderfully warm color and especially good after late Sept. Magician, a newer one, shows great promise for October. Jetfire is a topnotch fiery red pomp.

Other good bronzes: Rusticon, Bronze Pandora (new, a fine warm color, but only after Sept. 15), Chevron, Bronze Minuet, Paragon (after Sept. 20). Good daisy: Buckskin.

SHADE ON THE GLASS?

Opinions among growers do vary plenty here!

Our own experience has led us to these conclusions:

1. The less shade, the better as far as growth, production, quality of Mums (or Snaps, or Carnations) are concerned.

2. Standards flowered during the hot summer months will usually show petal rot or burn unless shaded fairly heavily (during flowering only)—and given regular Parzate spray. Muslin or Aster cloth stretched above beds in flower doesn't seem to do as much good as actual shade on the glass—although a combination of light shade on the glass plus cloth over the bed is often used.

3. We have **not** been shading newly planted cuttings. It seems unnecessary if they are sprayed overhead lightly several times daily till established.

4. There are times when it just gets so hot under glass that if you expect people to stay in there and work, you have to put a light shade on. It does help cut down watering. And it reduces temperature under the sateen covers in late afternoon.

5. Pot Mum specialists who flower through the summer months generally carry a light shade.

6. Tests at Michigan State College showed that ordinary Aster cloth (46% light reduction) cut production very substantially on greenhouse Pompons. **Different varieties produced from 10 to 55% less bunches per foot under the cloth compared to full sun in the greenhouse.** Makes you want to **not** shade!

7. If shade is applied it should be light enough so that at least 5000 to 5500 foot candles of light comes through on clear afternoons. Use a meter! GROWER TALKS, July 1956 for source, etc.

TAKING THE BUD

Which bud to let flower on big Mums?

Now that we grow Mums on definite schedules, this too can be reduced to simple rules.

The rule: If the crop is planted and pinched on or near the recommended dates, flower the first bud that appears. In other words, as soon as a bud of any kind appears, remove all side shoots and let the center bud flower.

Crowns and Terminals

Under long summer days (14 hours) a Mum will remain "vegetative"—will produce "blind" growth tips free of buds. As the days gradually shorten towards fall, the Mum becomes "reproductive"—and produces a cluster of flowering buds at the growth tip.

When a plant is physiologically midway between vegetative and reproductive growth, it may produce a so-called **crown bud**—a single flowering bud surrounded by blind or vegetative shoots. It might be called a half hearted flowering bud—produced by a plant not yet fully reproductive.

As days shorten still further, the same plant will become fully reproductive and produce a **terminal bud**—cluster of flowering buds.

Some of these half way vegetative crown buds can be left on and will make good flowers, some can't. You can't tell by looking at them. The point is that if the crop is planted, pinched, and grown according to recommendations, even though a crown might appear, it will almost always be a "good" one. Hence our recommendations to flower the first bud that appears—crown or terminal.

The rule applies to both normal and off-season crops.

A possible exception

Under certain conditions of day length, temperature, etc., some varieties of Mums (or Pompons) can produce a crown bud 3-4 weeks or less after planting. Such crowns produced while the plant is less than 18-20 inches tall, we remove and allow one vegetative side shoot to grow on.

On normal season standards, a crown that appears earlier than these dates, is best removed:

Varieties that flower	Remove crowns that appear before
Oct. 15-Nov. 5	Sept. 5
Nov. 5-30	Sept. 25
Dec. 1-15	Oct. 5

TEMPERATURES FOR YEAR ROUND MUMS

Year round mums in the northern greenhouse especially, are a crop which must be kept within closely controlled temperatures. Perhaps they are "fussier" than other crops in this respect. Under some conditions, a bench grown 5° too low will result in complete failure to **set** buds. Some crops some seasons held 5° too **high** will **set** buds, but will either delay flowering or simply fail to **develop** the buds into flowers at all. We have seen benches fail to flower because of both too cool and too warm temperatures. These failures are, in our experience, 90% from too warm temperature, 10% from too cool.

ON GROWING GOOD MUMS

A General Rule

For either pomps or standards (cut flower) in northern greenhouses, the following temperatures during firing season are recommended:

Nights	60°
Cloudy Days	60°
Sunny Days	65°

These temperatures are warm enough to set buds on all recommended varieties, and cool enough to insure development of buds—and good keeping quality, substance, etc.

No one holds temperatures exactly. If a mum crop is held within 2° either way of the above temperature it's close enough—**if** it's not consistently 2° the same way. Likewise an occasional sub-zero night may make it impossible to stay above 50° for a few hours. No harm **if** it just happens a night or two or three a year. The temperature effect is cumulative.

Pot mums should be held at a night temperature of 65°, cloudy days 65°, sunny 70°. See pot culture, page 82.

The Problem—Excess Heat

At least 90% of the temperature troubles on year round mums, in our observation, result from running houses too warm. Much of this is actually the result of excessively high day temperatures. In some cases, a tendency is carried over from other heat loving crops (Roses) to run sunny day temperatures up to 70-75° or even higher. Result, especially on the 12 to 15 week pomps (used in winter): either serious delay in flowering, or complete failure of buds to develop. Each spray of pomps will produce compound sprays—20 to 30 buds per stem, none of which ever open. It's a mess!

Too warm winter temperatures will delay standards too, but not as noticeably. However, running winter-spring standards too warm **will** result in small flowers, poor substance and keeping quality.

One aid in solving this problem of too warm temperatures on winter mums is use of recording thermometers. At a cost of about $50.00, such a unit provides a continuous written record of temperatures night and day. It helps the grower to see how well he is holding temperatures, helps focus attention to this all-important problem.

Cooling fans at the Mee Brothers Range, Redwood City, California. In the photo (left) Bill, and (right) Jack Mee. The entire range here, well over 100,000 feet, is now equipped with pad and fan cooling. We were a bit surprised to find this large cooling installation in the Bay area of California which is noted for its cool moderate summers. However, the Mees report that summer days are often amply warm, under glass, to seriously reduce quality and even produce some heat stall on Mums.

A Suggestion

If in doubt as to whether a crop of mums or pomps is being grown too warm, try this: nearly all houses tend to be warmer on one end or the other. Placing thermometers every 25-50 ft. down the house at night will verify this. Study the plants on the warm end. On typical winter pomp heat delay, the warm end plants will be later flowering (heat delay), taller (again because of the delay), and of inferior flower size. In some cases, the warm end may fail to flower entirely. Pink varieties fade on warm ends.

Light Leakage

There have been a few cases where light "leaking" onto the crop by accident from some nearby source in effect delayed flowering of a crop. Effect is like heat delay. The tip-off nearly always is the area affected. Plants nearest to a window of a nearby home—light shining out at night—or in some cases, lights used on main walks by night men.

ABOUT COOLING GREENHOUSES

The new method of "fan-pad" evaporative cooling of greenhouses in summer is, in our observation, one of the major developments in greenhouse production of our generation. The first trial installation was made at Novak's, Ponca City, Oklahoma, in June 1954. Today the bulk of the glass in the Southwest and in Colorado is cooled. Further, there are dozens of installations, some small, some large, across the Midwest and East. This in itself speaks volumes as to what growers think of cooling.

In mum production, it solves the summer heat delay problem which at first stopped summer production of both cut and pot mums, especially in the Southwest. It enables growers, even in the very hot summer areas, to produce excellent quality mums—and at a time when the demand is very good. Indications as to its effect on Carnations are equally promising.

Midwestern and eastern growers ask: "How will it work in our relatively high humidity?" Most of these "northern" growers are sold on the merits of cooling—if it will work reasonably well in their climate.

Our own experience (at West Chicago) with pad cooling is at least an indication of what can be expected. Here are several readings we obtained.

	Average Summer Day, Moderately Warm Moderate Humidity	Warm, Dry Summer Day, Humidity Below Normal
OUTDOORS		
Temperature	89° (3 P.M.)	90°
Relative Humidity	52%	33%
COOLED HOUSE		
Temperature	79°	72°
Relative Humidity	80%	74%
CHECK HOUSE		
Temperature	94°[1]	90°
Relative Humidity	54%	36%

All temperatures taken with glass rod thermometer (no metal back), held in shade. See GROWER TALKS, Sept. '56, page 21.
1. Temperature in check house with top and side vents open, and a fair breeze is normally very near outside temperature. This reading made on quiet day, little air circulation, hence high temperature.

To Predict

—how much cooling can be gotten with a given amount of humidity, there is a simple formula. It requires that wet

A striking demonstration of the effectiveness of greenhouse cooling on summer Mums. The Indianapolis Pink, above, was grown by Wegehoft Brothers, Indianapolis, Indiana (Walter Wegehoft in the photo). The dozen on the left were grown in the pad-fan cooled section at Wegehoft's. Those on the right, same culture, were grown in a house without cooling. Flowering date late July. The difference in color was just as striking as the difference in size and quality noted above. Wegehoft's are quite sold on cooling!

and dry thermometer readings be taken, preferably with a Sling Psychrometer (Taylor Instrument, 95 Ames Street, Rochester, N. Y.) Available locally.

The rule: temperature of air entering the greenhouse just inside the pad will approximately equal dry bulb temperature minus 80% of difference between wet and dry bulb.

An example (outdoor condition the day of the June 9 test listed above):

Outdoor dry bulbs, 90°
Outdoor wet bulb, 67°

Difference between wet and dry bulbs: 23°
80% of 23° equals 18.4°
90° minus 18.4 equals 71.6°

Actually the air entering was some cooler than this 71.6° —it was 67°.

Some allowance must be made for heating of air as it crosses the house—as will be noted in the tables above.

A few readings of this type made under your own conditions of temperature and humidity would give a good picture of the benefits you could derive from cooling.

Sources, Cost, etc.

To install pad-fan cooling, including all labor and material, averages 14 to 18c per sq. ft. of ground area (not bench area) covered. Costs vary, mostly with labor.

Operating costs are nominal, depending on electric rates a good bit. We figure about 10-12c per hour for electricity for a 24,000 sq. ft. range—plus depreciation of equipment, annual replacement of pads.

Sources: There are many! Here are several growers who are also dealers in this equipment, and who should be well qualified to help engineer installation.

1. Furrow & Co.
   North Broad St., Box 545
   Guthrie, Oklahoma
2. Stuppy Floral
   625 Francis Street
   Saint Joseph, Missouri
3. U. L. Patterson
   P. O. Box 187
   Shelby, N. Carolina

Further details on cooling: write for our booklet on the subject. No charge.

LIGHTS—WHY AND HOW

The Chrysanthemum is a "short day" plant. That means it will set buds when it is exposed to a short (12 hours or less) day. Mums naturally flower in the fall because the days are shorter.

With this in mind, it is apparent that a cutting planted in midwinter will promptly set bud—due to the very short day length. To delay this bud setting until sufficient stem length develops, we extend the length of the natural day with artificial light (technically, we shorten the night rather lengthen the day). **Buds will not form on Mums as long as the periods of uninterrupted darkness are not over 7 hours long.** The tables that follow are designed to provide enough light under all conditions to prevent bud set.

How to Light (with separate reflectors)

	Watt	Spacing	Height above soil
One 4 ft. bed	60	Every 4 ft.	60 inches
Two 4 ft. beds (One row of lights)	100	Every 6 ft.	60 inches
Three 4 ft. beds (One row of lights)	150	Every 9 ft.	60 inches

Reflectors must be held up off the bulb. Built in reflector bulbs may be used. For a 20 ft. wide house, a single row of 300 watt reflector bulbs facing down at a 45° angle, spaced every 10 ft. will do it. Bulbs should be staggered on alternate sides of ventilators—not directly under because of rain damage to bulbs. Figure about 1½ watts per square foot of ground covered. Indoor type bulbs may be used if covered with metal protectors to keep water out. Use flood, not spot bulbs.

It takes 7 foot candles to prevent bud formation.

On large installations, half the area may be lighted before midnight, half after. This halves the demand cost.

230 volt lines reduce main sizes greatly.

HOURS OF LIGHT PER NIGHT

Latitude 35-45°		Latitude 25-30°	
North of Charlotte, N. C.; Memphis, Tenn.; Bakersfield, Calif.		Dec. 1-Jan. 31	4½
July 15-Aug. 1	1	Feb. 1-28	4
Aug. 1-31	2	March 1-31	3
Sept. 1-Oct. 31	3	April 1-30	2½
Nov. 1-30	4	May 1-31	1½
Dec. 1-Jan. 31	5	June 1-July 31	1
Feb. 1-28	4	Aug. 1-31	2
March 1-April 30	3	Sept. 1-30	2½
May 1-31	2	Oct. 1-31	3½
		Nov. 1-30	4

The above hours of light should be provided as near the middle of the night as possible. For example, if 4 hours of light are called for, light should be turned on from 10 P.M. till 2 A.M. If the lights were turned on from 6 P.M. till 9 P.M., there would be a period of darkness from 9 P.M. till 7 A.M. (in winter)—which would total 10 hours. The maximum allowable period of uninterrupted darkness to prevent buds is 7 hours.

Likewise, if half the beds are lighted before and half after midnight, be sure to apply both periods as near midnight as possible. For example, lights from 8 P.M. till midnight (4 hours) leaves a period of darkness from midnight till 7 A.M. —just within the allowable 7 hours.

PREMATURE BUD-SETTING

If cuttings for fall mums are ordered to be delivered in winter or early spring (September 1 to May 1), they must be lighted to prevent bud-setting on very short stems. Use

ON GROWING GOOD MUMS

60-watt bulbs 4 x 4 ft., 60 inches above soil. Light four hours per night (10 P.M. to 2 A.M.)

The Garden varieties and the early shading mums (such as Good News) are especially apt to throw premature buds.

Lower temperatures help to avoid early buds. Few varieties will set buds at 35-40° nights, even without lights. Some varieties (Good News, the hardies, etc.), if cuttings are planted to a very warm house (65° nights), will set a few buds even though they are lighted.

SHADING DETAILS

Why do we shade?

The Chrysanthemum plant will set bud only if exposed to a short day (not over 12 hours)—and to a temperature of 60°. We, of course, artificially shorten the day when necessary by means of black sateen.

For years it was common practice to apply sateen cloth in late afternoon—just before closing time. Often this meant that the first covers went on as early as 4 P.M.—which is 3 P.M. by standard time. Applying shade for longer than 12 hours per night is definitely harmful to the crop. First, if shade is put on at 4 P.M. during hot weather, it will become very warm under the covers, thus further aggravating the hot weather delay problem. Even during cooler periods, this mid-afternoon shading has a light reduction effect—much like carrying a heavy shade on the glass, only worse. Result: substantially reduced production, flower size, etc.

We therefore strongly recommend not applying shade till 6 or 6:30 P.M.—and leaving it on to provide 12 hours of darkness to all beds. It may cost overtime to get it done in the evening, but it will be worth it—in our experience.

Dates to Start and Stop Light and Shade

Latitude 25-35°

Response Group	Lights: Start in Fall	Lights: Stop in Spring	Shade: Start in Spring	Shade: Stop in Fall
7-8 Weeks	Continuous		March 29	Sept. 20
9-11 Weeks	Continuous		March 15	Oct. 1

Latitude 35-45°

North of Charlotte, N. C.; Memphis, Tenn.; Bakersfield, California.

Response Group	Lights: Start in Fall	Lights: Stop in Spring	Shade: Start in Spring	Shade: Stop in Fall
7-8 Weeks	July 15	May 30	March 25	Sept. 8
9-11 Weeks	Aug. 1	May 30	March 10	Oct. 1
12-14 Weeks	Aug. 25	May 30	Feb. 25	Oct. 20

INTERRUPTED LIGHTING

In our experience, Indianapolis Mums flowered in winter (November to April) up North will definitely benefit from interruption. Flowers will be noticeably larger, more petals. It costs nothing more than a little juggling of schedules. Our Mum Planning Service will be glad to lay out an interrupted schedule for your winter crop. We have a rather complete circular on the subject. Write if interested.

Interrupting pompons is done by a few growers (in winter) to open up sprays. It does help, but in general is a bit treacherous. Should be attempted experimentally at first. Removal of center bud will help greatly on winter spray formation—and is safe!

WHAT IS AN "EIGHT-WEEK" VARIETY

Note that all varieties in this guide are classified under a response group heading—"6-week varieties"—7-week, 8-week, etc. What does it mean and why is the term used?

It is primarily a term of use in connection with controlled flowering—under lights and shade. It refers to the number of weeks of short days needed to make the variety flower. For example, an 8-week variety is one which will "respond" (or flower) 8 weeks after short days are started. Starting short days is accomplished in summer with black cloth, in winter simply by discontinuing lights at night.

The response group classification is of use to the normal season grower, too. The 6 to 8-week varieties are generally the garden or hardies (flowering in late September thru October). The 9 to 11-week kinds are the November flowering ones, the 12 to 15-week kinds are the lates—December flowering. Nearly all cloth house crops take the 9 to 11's. Most pot mum growers use 9 to 11-week kinds, too.

COLORS AND VARIETIES

Demands for colors are definitely shifting! The call is for more pinks, reds, oranges—at the expense mainly of white, some yellow. Here is a fair average in our experience of color percentages wanted in most parts of the U.S.

Color Percentages of Pompons

	Jan.-March	April-May	June	July-Aug.	Sept.-Oct.	Nov.-Dec.
% White	45	45	50	40	30	35
% Yellow	25	25	25	35	30	25
% Pink	20	20	15	15	15	15
% Bronze	10	10	10	10	25	25

Note: Southern markets seem to prefer less white.

Color Percentages of Standards

	Jan.-March	April-May	June	July-Aug.	Sept.-Oct.	Nov.-Dec.
% White	55	45	40	40	30	35
% Yellow	30	30	35	35	35	30
% Pink	15	15	15	15	15	15
% Bronze	—	10	10	10	20	20

Note: Southern markets seem to prefer less white.

Pink and bronze varieties fade badly in summer unless grown in cooled greenhouses or areas with cool summers.

Varieties—hundreds of 'em!

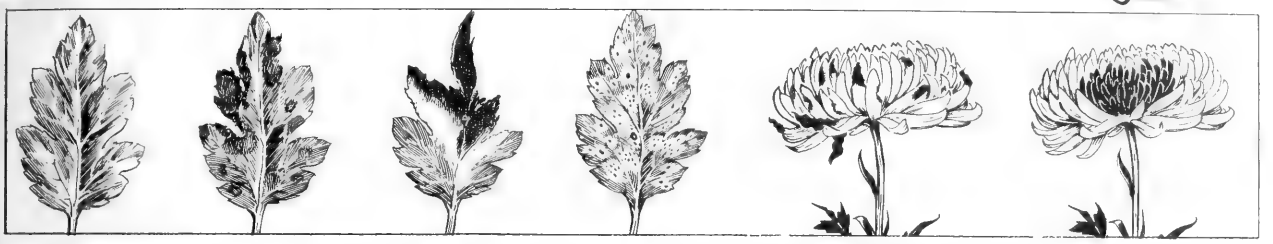
Certainly no room to discuss them here. We've flowered nearly 500 in our continuous flowering test program. You'll find our recommendations for each season in the tables starting on page 65. Also, if you're going through Chicago, stop in and see the new ones in our trials—at any period.

SINGLE STEM OR PINCH?

Where time permits, we recommend pinching fall or normal crops. While there is some advantage in spray formation, generally improved and more even growth, we don't feel these improvements warrant the added cutting cost of single stem crops.

Nearly all year round or continuous flowering programs are operated on a single stem basis. Main reason: it enables the grower to realize an extra crop a year from about half the benches on a program.

Even beyond this, though, there is a certain vigor and quality of growth on the direct benched unpinched crop



Common mum diseases, from left: Normal leaf, septoria leaf spot, foliar nematode, puccinia (rust), botrytis (petal rot), and ascochyta (petal blight). The petal rot is an especially common problem. Control: partial shade, ventilation and heat to keep petals dry, and spray over flower tops as often as every several days from the time color shows with Parzate, 1½ oz. per 10 gallons, plus spreader. It can be stopped.

that's hard to get where pinching is practiced. This is especially apparent on winter-spring crops.

CONTINUOUS FLOWERING SCHEDULES

Actually most off-season Mum growing is done on so-called year round flowering programs. A given area, usually not less than 6-8 benches, is put on a continuous rotation, each bench producing 3 crops during the year. Thus, an 8 bench house would produce 24 benches of flowers each 12 months. The advantages of steady cut, steady return, and even work load are obvious.

Because such programs are nearly always tailor-made to fit local conditions, none are included here. If interested, write our Mum Planning Dept. for details. (See inside front cover).

ABOUT SPACING

For normal season pompons where a uniform quality spray is desired, space 6 x 7, prune to 2 stems per plant, 3 on outside rows. This will give very few culls and you'll be averaging 6 stems per 9 to 10 ounce bunch.

Some growers space 7 x 8 or 8 x 8 inches, prune to 3 (outside rows, 4). This gives more culls, less uniform cut, a few more stems per foot.

Two stems per plant can be grown on roughly the same area **per stem** as one. Example: for late summer pompons we recommend 5 x 8 in. for two per plant (20 sq. in. per stem) or if single stem, space 5 x 4 in.—also 20 sq. inches. Where three stems are grown per plant, add roughly 10% to the amount of bench area per stem. Reason: three stems sharing the same root system!

The one sure way to control thrip, spider, and petal blight—on outdoor Mums, especially in warm, damp weather. All beds on the above crop (Florida) are sprayed daily from the time color shows until the crop is cut with Dieldrin and Parzate under very high pressure. Just over the tops of the flowers.

Our recommendations for year round flowering under reasonably favorable conditions (for no pinch culture):

Crops to Flower	Spacing	Sq. Inches per Stem
Jan. 1-March 15	6 x 5 in.	30 sq. in.
March 15-June 1	7 x 4 in.	28 sq. in.
June 1-Oct. 15	6 x 4 in.	24 sq. in.
	(Note: Where a medium weight spray of pompons is wanted and with more production per bed, many growers go to 5 x 4 in. especially from July thru September.)	
Oct. 15-Jan. 1	7 x 4 in.	28 sq. in.

BASIC SPRAY

Starting 10-12 days after planting cuttings, spray weekly in summer (less in winter) with the following solution, discontinuing spray when color shows.

Per 10 gallons water

2½ oz. Parathion 15% wettable powder	**red spider, foliar nematode,** aphis, midge, thrip, various leaf chewers, mite.
1½ oz. DDT, 50% wettable powder	**thrip,** midge, sow bugs, leaf rollers, pill bugs, leaf hoppers, white fly, tarnish plant bugs.
1½ oz. Wettable sulphur (powder)	powdery mildew (may be omitted where mildew is not present)
2½ oz. Fermate	Septoria leaf spot, rust, (general fungicide)
Dreft (or other spreader)	Spreader

Control of Petal Rot

Rotting of petals on standards mainly, also on outdoor pompons under warm moist conditions, can be disastrous!

Let's take summer standards (under glass) first. The problem **can** be controlled. Here's how:

1. **Parzate spray** at least every week. Dilution: 1½ oz. per 10 gallons of water, plus spreader. Apply with 200-250 lbs. pressure on sprayer. Apply to flowers from overhead from time color shows till harvesting.
2. **Shade.** Either a light to medium shade on the glass or else cheesecloth over the beds is necessary during hot weather. Should still allow 5500 foot candles of light in mid-afternoon.
3. **Varieties.** Indianapolis is very hard to keep from burning in midsummer. Giant Betsy Ross, Good News, Detroit News, and Sentinel are less apt to burn.
4. **Cooling**—is helpful, only if pads are kept dry at night to reduce humidity. Fans should be operated 24 hours a day.
5. **Thrip.** A sort of pale brown color on white standards in summer may be partly thrip injury. Remove bad flowers from the house. Spray clean flowers and buds with Parzate (above) with Dieldrin added.

ON GROWING GOOD MUMS

DISBUDS

Disbuds today are a quite small part of the American Mum crop—but we believe that the trend will be sharply up in the next several years. Not necessarily "short" disbuds, but more of regular 3½-4 inch flowers on at least 25-30 inch stems—produced year round.

Production per sq. ft. of such disbuds is almost double that of regular "standard" mums—which means that cost is roughly half as much. In other words, where standards are being grown for $3.50 per dozen, the same bench could produce disbuds at $2 per dozen—and at a better profit.

It's not that these disbuds should or will replace standards or any other part of the mum crop. Actually, they are in effect a different facet of the mum crop—and will be used in ways distinctive from standards. They are excellent for lower priced basket work—funeral, hospital, church, and home decorations. Because they ship well, are long-lasting, and easy to arrange, they are a natural for low mark-up cut flower outlets. A considerable number of large producers of year round standard mums are supplementing their standard production with a "test basis" year round disbud program. The two work well together on a year round program —and also can be combined with a pompon program.

Varieties

There are many fine ones, and several excellent novelties this year. Among the very best:

	Dec. 1-Apr. 15 Winter	Apr. 15-June 15 Spring	June 15-Sept. 15 Summer	Sept. 15-Dec. 1 Fall
White				
*Wh. Pk. Chief		X	X	
*Marblehead		X	X	X
Silverbow		X	X	X
Queens Lace		X	X	X
*Ind. White	X	X	X	X
*Iceberg	X	X	X	X
*Ice Cream		X	X	X
Belray		X		X
Ermine	X	X		
Moontide		X	X	X
Themesong			X	X
Yellow				
*Harvest Golden		X	X	X
*Blazing Gold		X	X	X
Golden Herald			X	X
Luyona	X	X	X	X
Yellow Lace		X	X	X
Good News		X	X	X
Ind. Yellow	X	X	X	X
Yellow Iceberg	X	X	X	X
Luxury		X	X	X
Chairman		X		X
Gordon Wells		X		X
Brighton's Yellow			X	
Yellow Marblehead				X
Bronze				
Mayford's Triumph		X		X
Amber Bright		X		X
Detroit News		X		X
Fred Yule		X	X	X
Ind. Bronze	X	X		X
Nectarine		X		X
Valentine	X	X		X
Calverts Gold	X	X		X
Olnura	X	X		X
Stuart Ogg		X		X
Pink				
Blue Ribbon		X		X
Mary Garden		X		X
Ind. Pink	X	X		X
Laughter	X	X	X	X
Merriment	X	X		X
Humdinger	X	X		X
Almega	X	X		X
Southdown Pink	X	X		X
Vedova—Venoya	X	X		X

Snapped in the Mum fields at Roman J. Claprood Co., Sun City, Florida, this past spring. From the left: Jack McCluskie, Geo. J. Ball representative; Jim Nanney, Gladiolus grower and general field supt. of Roman J. Claprood Company; Cliff Kraft, Mum Planning Service, Geo. J. Ball, Inc.; Frank Morin, pompon grower, of Roman J. Claprood Company. Subject of the moment was a promising looking bench of disbuds. Most attempts at disbuds in Florida have run into petal rot, etc., but this planting looks promising. Pompons continue to make up 90-95% of the Florida Mum crop.

Schedules

Schedules in outline form for year round disbuds are given below. These schedules should produce a minimum of around 25 inches of stem on most varieties round the year. If longer stems are desired, one or two more weeks of long days should be given.

DISBUD SCHEDULES

For Flowering Period	Weeks plant to pinch	Weeks pinch till start of short days	Weeks start of short days till flowering	Response Group that can be used
Jan. 1 to Mar. 15	3	3	11	10-11
Mar. 16 to April 15	3	3	10	10
April 16 to April 25	3	2	10	9-10
April 26 to May 30	3	1	10	9-10
June 1 to June 15	2	1	10	9-10
June 16 to July 31	2	0	10	9-10
Aug. 1 to Oct. 15	1	1	10	9-10
Oct. 16 to Oct. 31	2	1	10	9-10
Nov. 1 to Nov. 30	2	2	10	9-10
Dec. 1 to Dec. 15	3	2	10	10
Dec. 16 to Dec. 31	3	3	10	10

Spacing: for winter crop 6 x 4 (or 6 x 5), two stems per plant, in summer-fall, 6 x 6, three stems per plant. Same temperatures as for standards.

As with other mum crops, the very best results will be achieved if a separate "program" is set up for growing disbuds—so that just the right number of long days, etc., can be provided for each crop—and so that no time is wasted. However, it is quite practical to combine year round disbuds (using schedules given below) with regular year round standard mums. Quite a few growers are going after disbuds in just this way—half a bench once or twice a month combined with their regular standards.

Our Mum Planning Service will be glad to work out a disbud program tailored to fit in with your other mum crops.

WE ACKNOWLEDGE

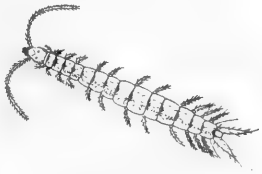
With thanks the substantial help afforded us in preparation of this 1958 BALL MUM GUIDE both by our floriculture schools, and by the major propagators.

TWO COMMON MUM PESTS

Actual size: ⅓ inch.

Found in soil, usually around roots. If Mums seem checked, growing slowly, yellow leaf edges; dig a few few of the poorer plants. If you see these little white fellows running for cover, you've got symphilids! They chew at root tips.

For control see page 57.

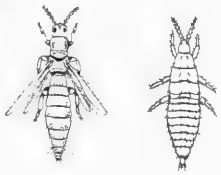


SYMPHILIDS

Actual size: $\frac{1}{32}$ inch.

Usually pale green, sometimes darker brown. Infest foliage and open flowers; cause general browning of blooms, especially in warm weather. Flowers must be picked apart and examined carefully with hand lens to find them.

Preventive program, page 57. DDT especially effective.



THRIP

PEST AND DISEASE CONTROL

The very excellent chart on pest and disease control (on pages 62-63) is from the Ohio Florists' Assoc. Bulletin #318. The notes below and on page 64 gave detailed dilutions, etc. on the materials recommended on the chart.

General

Add spray materials to a small quantity of water, mix thoroughly, then pour in full spray tank with agitator in motion. Warm bombs to 70° to 90°F. before using and observe precautions printed on the label. All bombs will treat 200,000 cubic feet. Greenhouse should be 75° to 90° and the soil should be moist enough so the plants won't wilt at this temperature range.

INSECTICIDES

Aramite

Very effective for normal and resistant red spider mites. Use 1¼ to 1½ pounds of the 15% wettable powder per 100 gallons with a spreader. Thoroughly cover all leaves. Can be used in the presence of sulfur and is compatible with Captan, Fermate, or Mildex. May cause discoloration of petals on some roses. Trade names are Aramite, Orthomite, and Niagaramite.

Technical (very pure) liquid Aramite can be painted on steam pipes at 8 oz. per 100,000 cubic feet. Close vents overnight. Repeat every 5 days.

Chlordane

Particularly useful for ants, grasshoppers, and cutworms. The 50% wettable powder is used at 1 pound per 100 gallons in the greenhouse and 2 pounds per 100 gallons outside. Also available as a 5% dust. A trade-name material, Snailicide, contains metaldehyde as an attractant and is very effective.

Chlorobenzilate (Geigy 338)

Useful for control of resistant red spider. Use 1 pound of the 25% wettable powder per 100 gallons with a spreader.

DDT

Controls thrips, leaf-roller, and other leaf-eating pests, sowbugs, pill bugs, mum and rose midge, leaf-hoppers, white fly, tarnished plant bug, and other less common pests. The 50% wettable powder is used at 1 pound per 100 gallons under glass or 2 pounds per 100 gallons outside. A spreader reduces effectiveness of DDT. Oil sprays of DDT contain materials that may cause damage. DDT also available as a dust. For soil pests apply DDT dust several times 30 days apart. Kalanchoe, Crassula, and other succulents may be injured seriously unless the purified grade of DDT is used.

Dieldrin

Useful for thrips, grasshoppers, spittlebugs, and certain soil pests (grubs, etc.). Use 1 pound of 25% wettable powder per 100 gallons with a spreader.

Aramite, OMPA (Mixture)

For highly resistant red spider, use a mixture containing 2 lbs. of 15% wettable powder Aramite and 8 ozs. (6.5 fluid ozs.) of 70% technical OMPA (Schradan) with Santomerse S at 1-2000 per 100 gallons for 15 applications in 16 weeks. The important thing is the regularity of application to maintain a continuous residue until the last mite is destroyed.

Dithio (Sulfa-Tepp)

The bomb or smoke generator is useful for control of red spider adults, thrips, aphids, soft brown scale, and mealybugs. Three applications every 3 to 5 days (depending on weather conditions) will be necessary to clean up red spiders, scale, or mealybugs.

Continued on page 64

PEST and DISEASE CONTROL CHART

From Ohio Florists Association Bulletin #318, March 1956

PEST	CROP	CONTROL MEASURES	REMARKS
Red spider (normal)	Any	Aramite, Chlorobenzilate, Kelthane, or Malathion spray.	Technical Aramite vaporized from steam pipes every 5 days.
		Parathion bomb, spray, or dust.	Causes leafdrop on roses if sulfur is present. May bleach open mums.
		Aramite, Chlorobenzilate, Dithio, Malathion, or OMPA bombs.	Sometimes vary in their effectiveness.
		Systox on soil.	Fumes very poisonous.
Red spider (highly resistant)	Any	Aramite, OMPA, and Santomerse S mixture.	15 applications in 16 weeks.
Red spider (phosphate resistant)	Any	Dithio bombs; Aramite bomb, spray, or vaporized from steam pipes; Chlorobenzilate spray or bomb.	Alternate materials to avoid quick build up of resistant population.
Red spider (Aramite resistant)	Any	Alternate Dithio and Chlorobenzilate bombs; Chlorobenzilate-OMPA bomb every 5-7 days.	Alternate materials. Chlorobenzilate—Meta Systox bomb useful.
Scale	Any	Malathion spray.	Repeated applications necessary.
		Dithio bomb.	3 times at 3-5 day intervals—kills crawlers only.
Thrips	Any	Dieldrin, Lindane, Malathion, or DDT dust or spray.	Parathion in any form also useful.
	Gladiolus bulbs	Dieldrin or DDT dusts.	Cover lightly before storing.
Mealybugs	Any	Malathion spray, Dithio bomb, or Parathion as bomb, spray, or dust.	With any of these, repeated applications necessary.
Aphids	Any	Malathion spray, Lindane dust or spray, Dithio bomb, Parathion as bomb, spray, or dust.	OMPA bomb or Systox on soil also useful but are slower to act and have longer lasting effect.
Leaf roller Sowbugs Mum midge Leafhopper White fly Tarnished plant bug	Any	Parathion bomb, spray, or dust, as well as DDT dust or spray.	Malathion effective on leaf rollers. Dieldrin good control for tarnished plant bug.

PEST	CROP	CONTROL MEASURES	REMARKS
Corn ear worm	Chrysanthemum	DDT bomb, dust or spray.	This pest eats the flowers.
Ants Grasshoppers Slugs, Snails Cutworms	Any	Chlordane or Dieldrin.	Snailicide containing metaldehyde best control for slugs, snails, and cutworms.
Leafminer	Aster, Azaleas, Chrysanthemum	Parathion spray, OMPA bomb, or Systox on soil.	
Foliar nematode	Chrysanthemum, Xmas Begonia	Use leafminer controls.	
Mite	Begonia Cyclamen English Ivy Gloxinia St. Paulia Snapdragon Foliage plants Others	Endrin.	Very effective.
Rose midge Strawberry root worm Fuller's rose weevil	Rose	DDT spray. Three applications on plants, soil, and walks 12 days apart.	Pinch and destroy heavily infested shoots.
Spittlebug	Any	Dieldrin or Lindane.	White frothy "spit" identifies this plant stinging pest.
Root aphids	Fern Palm, Poinsettia	Lindane, 1 oz. of the 25% wettable powder per 30 gallons.	Apply like a liquid fertilizer.
Symphylids	Any	Lindane — see root aphids. For bench crops use 1 oz. per 100 sq. ft.	One treatment often effective for a year.
Earthworms	Any	Chlordane or DDT on soil.	Steam sterilize when possible.
Root nematodes	Any	Steam sterilize soil and pots.	Steam bench area where infested plants grew.
		Dow MC-2 or Iscobrome.	Contain methyl bromide.
		Tear gas, Larvacide.	Injures living plants.

Fogg Ball Inc.

DISEASE	CROP	CONTROL MEASURES	REMARKS
Damping-off	Any	Pano-drench (as directed) Arasan, Fermate, Zerlate, Parzate, Captan, Terraclor, or Semesan.	(Except Pano drench) — 1 tablespoon per gallon and flood affected area. Dust seed lightly.
		Steam sterilize soil and pots. Avoid recontamination.	Don't injure stems of cuttings or seedlings when potting or planting.
Stem or root rot	Any	Pano-drench (as directed) Fermate, Zerlate, Parzate, Captan, Semesan, Terraclor.	See damping-off. Don't plant deep; avoid overwatering.
	Calla	2 oz. Spergon in 1 gal. water for 3-hour soak.	Remove rotted portions of calla before treatment. Steam soil and pots.
		1 lb. New Imp. Ceresan to 50 gal. water. Soak 1 hour and plant.	
		Formaldehyde 1-50 for 1 hour.	
Wilt	Aster	Steam sterilize soil and pots.	Steam or rotate plantings.
	Begonia	Steam sterilize soil and pots.	Propagate from disease-free plants.
	Carnation	Steam sterilize soil and pots.	Keep soil pH 6.0-6.5 and calcium at 150-200 ppm.
	Chrysanthemum	Steam sterilize soil and pots.	Buy cultured cuttings.
	Cineraria	Steam sterilize soil and pots.	
Rust	Aster Carnation Snapdragon	Dithane Z-78, Captan, Fermate, Zerlate, Parzate, or sulfur.	Keep foliage dry and new growth covered lightly with fungicide.
Black spot	Rose	Captan or Fermate.	Avoid overhead syringing.
	Chrysanthemum English Ivy	Captan, Fermate, Zerlate or Parzate.	Repeated applications necessary. Cover lower surfaces of leaves.
Botrytis or petal blight	Chrysanthemum Snapdragon Others	Parzate dust applied weekly when color shows.	Keep flowers dry. Reduce humidity with heat and ventilation. Use fans to circulate air.
Mildew	Calendula Chrysanthemum Hydrangea Rose Saintpaulia Snapdragon	Sulfur dust or spray. Sulfur vaporized from steam pipes or light bulb in metal can.	Sulfur often bleaches flowers. Parathion and sulfur together cause leafdrop on roses.
		Mildex or Omazene spray regularly.	For downy mildew use Dithane Z-78 spray.
		Avoid drafts or infection will spread rapidly.	Reduce humidity with heat and ventilation.
Leafspots Foliage blights	Aster Azalea Begonia Carnation Chrysanthemum Cyclamen Gardenia Geranium Hydrangea	Captan, Fermate, Zerlate, or Parzate sprays applied to thoroughly cover all of the plant.	Pick off and destroy badly infected leaves, keep foliage dry, give more space and air.

DISEASE	CROP	CONTROL MEASURES	REMARKS
Canker	Camellia	Remove and destroy infected shoots. Sterilize shears after each cut by dipping in rubbing alcohol.	Shoots wilt and die. May kill entire plant unless infected shoots are removed.
	Gardenia	Take cuttings from tops of plants. Steam sterilize soil mixture and pots.	Infected plants have orange-yellow inner bark.
	Rose	See Camellia.	Avoid leaving stubs.
Blackleg	Geranium	Spray plants regularly with Captan or Parzate. Discard diseased plants.	Grow stock plants inside. Use coarse propagating sand and water sparingly.
Black mold	Rose	Soak dormant manetti in 1 pint formaldehyde to 40 gal. water or 1 lb. potassium permanganate per 25 gal. water for 2 hours.	Spray empty grafting case with 1 lb. Bordeaux per 5 gal. water.
Branch rot	Geranium	Don't injure stems tearing off flower stalks; break off just underneath flower head.	Spray plants regularly with Captan or Parzate.
	Carnation	Captan, Parzate, or Dithane Z-78 sprays.	Keep foliage and stems dry.
Stunt	Chrysanthemum	Destroy infected plants.	Buy stunt-free plants.
	Cyclamen	Steam sterilize soil and pots.	
Mosaic	Any	Destroy badly infected plants.	Spread by aphids.
Yellows	Asters Chrysanthemum Many others	Grow under cloth. If outside, DDT sprays repeatedly.	Spread by leafhoppers. Control by DDT sprays not always satisfactory.
Spotted wilt	Calla	Destroy infected plants and keep thrips under control.	White or yellow spots or rings on leaves. Flowers may be distorted.
Crinkles	Geranium	Destroy plants that have this virus.	Watersoaked spots or areas appear on foliage in winter.
Chlorosis	Azalea Chrysanthemum Gardenia Hydrangea Rose Snapdragon	Often due to poor root action. Check for excessive fertilizer, high pH, root nematodes, symphylids, or waterlogged soil.	Use chelated iron at 1 oz. per 10 to 20 gallons. Use acid peat in soil with azaleas, gardenias, and hydrangeas.
Leafscorch	Lily	Keep soil pH 6.5 to 7.5—apply lime to soil.	Avoid acidic fertilizers—use nitrate of soda at 1 oz. to 2 gal. every other week.
Foliar dieback	Snapdragon	No control known except hand picking of leaves.	Tips of leaves wilt back to stem; stem dies.
Gall	Azalea	Bordeaux spray or hand pick.	Pinkish white puffy growths on leaves.

FOR SPECIFIC DIRECTIONS ON THE USE OF THESE MATERIALS, SEE PAGES 61 AND 64

PEST AND DISEASE CONTROL

(Continued from page 61, Dillutions, etc. for materials recommended on previous page)

Endrin

Specific for cyclamen mite. Use the 18½% emulsion at 1-400 with a spreader.

Kelthane (FW 293)

For red spider. Use 1 pint per 100 gallons with a spreader. Compatible with many spray materials, but not lime.

Lindane

Very effective for aphids, thrips, spittlebugs, and symphylids. Available as a 1% dust and as a 25% wettable used at 8 ounces per 100 gallons with a spreader. For control of various soil pests, apply the wettable powder at 1 ounce per 100 square feet or 8 ounces per 1000 square feet in water. Soil applications may be effective for a year. Can paint steam pipes with 4 ounces of 25% WP Lindane for 100,000 cubic feet—use enough water to make thin slurry and keep vents closed overnight.

Malathion

Control red spider, aphids, thrips, scale, leafrollers, and mealybugs. Covers wide range of pests like Parathion, but is safer to plants and people. Use 25% wettable powder at 1½ to 2 pounds per 100 gallons on all pests except scale where amount should be increased to 5 pounds and application repeated.

OMPA (Octamethyl pyrophosphoramide, Pestox-3, or Schradan)

Kills both normal and resistant red spider mites, aphids, and foliar nematode. A systemic insecticide absorbed through younger leaves—not a contact or a fumigant. Slow acting and may be necessary to bomb 3 or 4 times at 1- to 2-week intervals with aerosols for resistant red spiders, then every 2 to 3 weeks. Very poisonous.

Parathion

Has a long residual action and kills a wide variety of pests, including red spider adults, aphids, thrips, leaf-eating pests, midge, mite, and others. It is available as an aerosol bomb, a smoke generator, a 2% dust, and as a 15% wettable powder which is used at 1 pound per 100 gallons under glass and 1½ pounds per 100 gallons outside. A spreader is recommended. In the presence of sulfur it causes leafdrop on roses. Its use causes leathery leaves on gardenias, yellow areas on aster and hydrangea leaves, and severe burn on cyclamen foliage. Ferns and other tender tropical plants may be damaged, and many types of succulents (Kalanchoe, Crassula, etc.) often are injured by its use. Covering such plants with several layers of overlapping newspaper will protect them from the fumes so the greenhouse can be bombed.

The wettable powder can be mixed with Captan, Zerlate, or Parzate. In any form, Parathion is very poisonous and precautions regarding its use should be observed.

Systox (E 1059 or Demeton)

Another systemic material absorbed through roots or young foliage, and also kills by contact or fumigant action. Faster acting than OMPA, more effective for normal red spider, aphids, and leaf nematode on mums, but similar in action to OMPA for resistant spider mite.

For soil applications use 2 fluid ounces of the 21% emulsion to 100 sq. ft. in any amount of water—lasts 2 to 3 months. For pot plants, put ½ fluid ounce of Systox in 15 gallons and apply as a liquid fertilizer. Systox can be applied to soil in combination with liquid fertilizers. Very poisonous—wear chemical cartridge respirator, rubber gloves, and protective clothing when applying as aerosol or to soil. Ventilate houses during and after Systox soil treatment to remove poisonous fumes.

Meta-Systox is similar in its action but less toxic to humans.

TEPP (Tetra ethyl pyrophosphate)

The aerosol bombs are useful for control of red spider adults and aphids. It is available as a contact insecticide to be used as a spray which can be mixed with wettable powders of DDT, Fermate and Captan. Avoid undue wetting of soil with the spray—it checks the growth of many plants.

FUNGICIDES

Captan (Orthocide)

Group name for new class of fungicides useful for leaf diseases, leaf spots, Botrytis, and other fungi. Use 1½ pounds per 100 gallons with a spreader.

Dithane Z-78

Quite useful for many leaf diseases, particularly downy mildew of roses, Botrytis, rust, and various leafspots. Should be used at 1 pound per 100 gallons with a spreader.

Fermate, Zerlate, and Parzate

Complex organic fungicides useful for leafspot, rusts, and blights, but not effective on mildew. Zerlate and Parzate appear to be somewhat more effective than Fermate for many diseases. Under glass use at 1 pound per 100 gallons, and outside use 1½ pounds per 100 gallons. In either case, use a spreader.

Mildex (formerly Iscothan)

Specific for powdery mildew. Use 6 ounces per 100 gallons with a spreader. In combination with Aramite use only 4 ounces per 100 gallons and saturate the plants. Do not combine with sulfur. May cause damage to young foliage of some varieties. Spray only when foliage can dry off rapidly—use heat and ventilation to facilitate rapid drying.

Omazene

Used for mildew at 8 ounces per 100 gallons with a spreader.

Semesan

Highly effective in control of Rhizoctonia damping-off and rot of cuttings. Use 1 tablespoonful per gallon of water (3 pounds per 100 gallons), mix well, and flood on infected area. Syringe deposit off foliage. Best not to apply during heat of day. Sometimes stunts young seedlings.

Sulfur

Flowers of sulfur are too coarse except for use in tin can fumigator. Sulforon-X is a very fine wettable form used at 1 to 1½ pounds per 100 gallons under glass and 2 pounds per 100 gallons outside—use a spreader in either case. Dusting sulfur also useful.

Terraclor

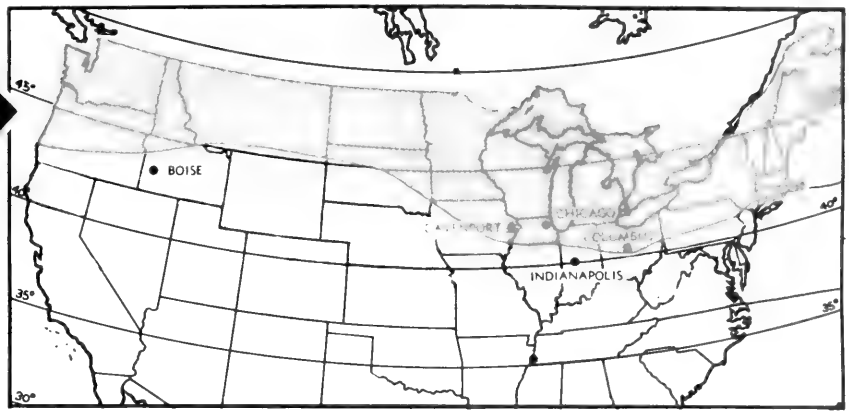
Useful for damping-off and stem rot. Apply 1 to 2 pounds per 100 gallons and drench the sand or soil.

SPREADERS

The purpose of a spreader is to reduce the surface tension of the spray liquid so it will spread over the leaf rather than gather in droplets. Some of the best materials are Santomerse S, used at 1-2000, or Triton-X, used at 1-3000.

Year Round Flowering Schedules

FOR GROWERS IN THIS AREA



ZONE 1

USE SCHEDULES BELOW (Thru page 70)

Throughout these tables, varieties marked with an asterisk (*) are the preferred varieties for the period concerned.

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Oct. 31/57	Nov. 14/57	Oct. 31/57-Jan. 1/58	Jan. 2/58	No	—	11	**Mar. 20/58**
Standards	Oct. 31	Nov. 14	Oct. 31-Jan. 8	Jan. 9	No	—	10	**Mar. 20**
Pompons	Nov. 7	Nov. 21	Nov. 7-Jan. 8	Jan. 9	No	—	11	**Mar. 27**
Standards	Nov. 7	Nov. 21	Nov. 7-Jan. 15	Jan. 16	No	—	10	**Mar. 27**
Pompons	Nov. 14	Nov. 28	Nov. 14-Jan. 15	Jan. 16	Mar. 15	Note 1	11	**Apr. 3**
Standards	Nov. 14	Nov. 28	Nov. 14-Jan. 22	Jan. 23	Mar. 15	Note 1	10	**Apr. 3**
Pompons	Nov. 14	Dec. 5	Nov. 14-Jan. 22	Jan. 23	Mar. 15	Note 1	11	**Apr. 10**
Standards	Nov. 14	Dec. 5	Nov. 14-Jan. 29	Jan. 30	Mar. 15	Note 1	10	**Apr. 10**

VARIETIES for above schedules

Standards

White
- *Ind. White
- *Fred Shoesmith (New)
- Queen's Lace
- (Note: In areas where March-April tends to be cool and cloudy, growers may find Mefo superior to Indianapolis until early April)

Yellow
- *Imp. Ind. Yellow
- Gold Lace
- Ind. Yellow
- Luyona

Pink
- *Ind. Pink
- Lavender Queen
- Mary Garden

Bronze
- *Dk. Ind. Bronze
- Ind. Bronze

Pompons

White
- *Shasta
- *Paramount
- Belray
- Ill. Igloo
- Iceberg (after Apr. 1)
- Whitetop (after Apr. 1)

Yellow
- *Yellow Shasta
- *Yellow Paramount
- Yellow Igloo
- Forty Niner
- Yellow Iceberg (New) (After Apr. 1)

Pink
- *Masterpiece
- *Delmar
- Jubilation (New)
- Portrait
- Almega

Bronze
- *Rusticon
- Olnura

A nice, even lot of spring Indianapolis at Crystal Springs Floral, Benton Harbor, Michigan. Gerhard Siegert in the photo. Although there are several promising newcomers in the field, Indianapolis continues clearly the number one standard for the year round greenhouse crop.

FOR GROWERS IN ZONE 1

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Nov. 28/57	Dec. 19/57	Nov. 28-Feb. 5	Feb. 6	Mar. 15	Note 1	10	**Apr. 17/58**
Dec. 5	Dec. 26	Dec. 5-Feb. 12	Feb. 13	Mar. 15	Note 1	10	**Apr. 24**
Dec. 19	Jan. 9	Dec. 19-Feb. 19	Feb. 20	Mar. 15	Note 1	10	**May 1**
Dec. 26	Jan. 16	Dec. 26-Feb. 26	Feb. 27	Mar. 15	Note 1	10	**May 8**
Jan. 9/58	Jan. 30	Jan. 9-Mar. 5	Mar. 6	Mar. 15	Note 1	10	**May 15**
Jan. 16	Feb. 6	Jan. 16-Mar. 12	Mar. 13	Mar. 15	Note 1	10	**May 22**
Jan. 23	Feb. 13	Jan. 23-Mar. 19	Mar. 20	Mar. 20	Note 1	10	**May 29**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Ind. White	*Imp. Ind. Yellow	*Ind. Pink	*Dk. Ind. Bronze
*Fred Shoesmith (New)	Gold Lace	Lavender Queen	Ind. Bronze
Queen's Lace	Ind. Yellow	Mary Garden	
	Luyona		

Pompons

White	Yellow	Pink	Bronze
*Iceberg	*Yel. Shasta	*Bluechip	*Rusticon
*Shasta	*Yel. Iceberg (New)	*Portrait	Olnura
Ill. Igloo	Yel. Igloo	Bonnie	Bronzechip (New)
Whitetop	Starbright	Pennant	Nectarine
Ill. Snowdrift	Mary Hall (after May 1)	Delight	
Pinocchio			
Keepsake (after May 15)			
Pacesetter			

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Feb. 6/58	Feb. 27	Feb. 6-Mar. 26	Mar. 27	Mar. 27	Note 1	10	**June 5/58**
Feb. 13	Mar. 6	Feb. 13-Apr. 2	Apr. 3	Apr. 3	Note 1	10	**June 12**
Feb. 27	Mar. 20	Feb. 27-Apr. 9	Apr. 10	Apr. 10	Note 1	10	**June 19**
Mar. 6	Mar. 27	Mar. 6-Apr. 16	Apr. 17	Apr. 17	Note 1	10	**June 26**
Mar. 13	Apr. 3	Mar. 13-Apr. 23	Apr. 24	Apr. 24	Note 1	10	**July 3**
Mar. 20	Apr. 10	Mar. 20-Apr. 30	May 1	May 1	Note 1	10	**July 10**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Giant Betsy Ross (After June 15)	*Good News (After June 15)	Ind. Pink	Detroit News
*Ind. White	*Imp. Ind. Yellow	Lavender Queen	Dk. Ind. Bronze
Fred Shoesmith (New)	Gold Lace	Mary Garden	Ind. Bronze
Queens Lace	Ind. Yellow		
	Luyona		

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White	Yellow	Pink	Bronze
*Shasta (Best if cooled after June 15)	*Yel. Beauregard (After June 15)	*Bluechip	*Rusticon
*Iceberg	*Mary Hall	Portrait	Beauregard (After June 15)
Ill. Igloo	*Yel. Shasta (Best if cooled)	Bonnie	Dk. Beauregard (New) (After June 15)
Keepsake	Yel. Igloo	Delight	Bronzechip (New)
Whitetop (Needs cooling in hot weather)	Yel. Iceberg (New)		
Pinocchio	Starbright		
Pacesetter			
Snowdrift (Best if cooled)			

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 1

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Mar. 27/58	Apr. 17	Mar. 27-May 7	May 8	May 8	Note 1	10	**July 17**
Apr. 3	Apr. 24	Apr. 3-May 14	May 15	May 15	Note 1	10	**July 24**
Apr. 17	May 1	Apr. 17-May 21	May 22	May 22	Note 1	10	**July 31**
Apr. 24	May 8	Apr. 24-May 28	May 29	May 29	Note 1	10	**Aug. 7**
May 1	May 15	May 1-May 31	June 1	June 5	Note 1	10	**Aug. 14**
May 8	May 22	May 8-May 31	June 1	June 12	Note 1	10	**Aug. 21**
May 15	May 29	May 15-May 31	June 1	June 19	Note 1	10	**Aug. 28**

VARIETIES for above schedules

Standards

White
*Giant Betsy Ross
Ind. White
Fred Shoesmith (New)
Wh. Pink Chief
Sentinel

Yellow
*Good News (One extra week of long days improves stem & flower size)
Ind. Yellow
Yel. Fred Shoesmith (New)
Ind. Gold

Pink
Ind. Pink
Lavender Queen
Laughter

Bronze
Detroit News
Mrs. Roy

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Iceberg
*Keepsake
Ill. Igloo
Shasta (Better under cooling)
Alaska (For Aug. only)
Silvertone

Yellow
*Yellow Beauregard
*Yellow Iceberg (New)
Yellow Shasta (Better under cooling)
Crescendo
Dandy
Starbright

Pink
*Bluechip
Pinkette
Pennant
Delight

Bronze
*Beauregard
Dk. Beauregard (New)
Gaiety
Jetfire

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
May 22/58	June 5	May 22-May 31	June 1	June 26	Note 1	10	**Sept. 4**
May 29	June 12	May 29-May 31	June 1	July 3	Note 1	10	**Sept. 11**
May 29	June 12	May 29-May 31	June 1	July 10	Note 1	10	**Sept. 18**
June 5	June 19	No	—	July 17	Note 1	10	**Sept. 25**
June 12	June 26	No	—	July 24	Sept. 25	10	**Oct. 2**
June 19	July 3	No	—	July 31	Sept. 25	10	**Oct. 9**

VARIETIES for above schedules

Standards

White
*Ind. White
*Giant Betsy Ross (until Sept. 15)
Fred Shoesmith (New)

Yellow
*Ind. Yellow
*Good News (Until Sept. 15) (Needs extra week of lights)
Ind. Gold
Yel. Fred Shoesmith (New)

Pink
*Ind. Pink
Dk. Orchid Queen
Laughter

Bronze
*Ind. Bronze
*Detroit News (Till Sept. 15)
Mrs. Roy

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Iceberg
*Shasta
Whitetop (after Oct. 1)
Illini Igloo
Pinocchio
Ill. Snowdrift
Silver Cloud

Yellow
*Yel. Beauregard
*Yel. Iceberg (New)
*Yel. Shasta
Gold Coast
Yel. Igloo
Starbright

Pink
*Bluechip
Bonnie
Portrait
Delight

Bronze
*Beauregard
Dk. Beauregard (New)
Jetfire
Rubicon
Gaiety

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 1

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	June 26/58	July 10	No	—	July 31	Sept. 30	11	**Oct. 16/58**
Standards	June 26	July 10	Aug. 1-Aug. 6	Aug. 7	Aug. 7	Sept. 25	10	**Oct. 16**
Pompons	July 3	July 17	Aug. 1-Aug. 6	Aug. 7	Aug. 7	Sept. 30	11	**Oct. 23**
Standards	July 3	July 17	Aug. 1-Aug. 13	Aug. 14	Aug. 14	Sept. 25	10	**Oct. 23**
Pompons	July 10	July 24	Aug. 1-Aug. 13	Aug. 14	Aug. 14	Sept. 30	11	**Oct. 30**
Standards	July 10	July 24	Aug. 1-Aug. 20	Aug. 21	Aug. 21	Sept. 25	10	**Oct. 30**
Pompons	July 17	July 31	Aug. 1-Aug. 20	Aug. 21	Aug. 21	Sept. 30	11	**Nov. 6**
Standards	July 17	July 31	Aug. 1-Aug. 27	Aug. 28	Aug. 28	Sept. 25	10	**Nov. 6**
Pompons	July 24	Aug. 7	Aug. 1-Aug. 27	Aug. 28	Aug. 28	Sept. 30	11	**Nov. 13**
Standards	July 24	Aug. 7	Aug. 1-Sept. 3	Sept. 4	Sept. 4	Sept. 25	10	**Nov. 13**
Pompons	July 31	Aug. 14	Aug. 1-Sept. 3	Sept. 4	Sept. 4	Sept. 30	11	**Nov. 20**
Standards	July 31	Aug. 14	Aug. 1-Sept. 10	Sept. 11	Sept. 11	Sept. 25	10	**Nov. 20**
Pompons	Aug. 7	Aug. 21	Aug. 7-Sept. 10	Sept. 11	Sept. 11	Sept. 30	11	**Nov. 27**
Standards	Aug. 7	Aug. 21	Aug. 7-Sept. 17	Sept. 18	Sept. 18	Sept. 25	10	**Nov. 27**
Pompons	Aug. 7	Aug. 21	Aug. 7-Sept. 17	Sept. 18	Sept. 18	Sept. 30	11	**Dec. 4**
Standards	Aug. 7	Aug. 21	Aug. 7-Sept. 24	Sept. 25	No	—	10	**Dec. 4**
Pompons	Aug. 14	Aug. 28	Aug. 14-Sept. 24	Sept. 25	Sept. 25	Sept. 30	11	**Dec. 11**
Standards	Aug. 14	Aug. 28	Aug. 14-Oct. 1	Oct. 2	No	—	10	**Dec. 11**

VARIETIES for above schedules

Standards

White
*Fred Shoesmith (New)
Mefo (After Nov. 15)
Ind. White
Imp. Ind. White (After Nov. 15)

Yellow
*Yel. Fred Shoesmith (New)
Yel. Mefo (After Nov. 15)
Ind. Yellow
Imp. Ind. Yellow (After Nov.15)

Pink
*Ind. Pink
Lavender Queen

Bronze
*Ind. Bronze

Pompons

White
*Paramount (Superior after Nov. 15—not recommended for pinched crops).
*Shasta
*Iceberg
*Whitetop & Feathertop
Ill. Igloo
Little America (Nov. only)
Ill. Snowdrift (Improved by interruption after Dec. 1)

Yellow
*Yel. Paramount (See note on white Paramount)
*Yel. Shasta
*Yel. Beauregard (Nov. 15-30)
*Yel. Iceberg (New)
Golden Chord
Yel. Igloo

Pink
*Portrait
*Delmar (Clears in 11 weeks)
Almega
Jubilation (New)
Ill. Springtime

Bronze
*Rusticon
Thelma
Rubicon
Beauregard
Rubaiyat (After Nov.1)
Ill. Warpaint (After Nov. 1)

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Aug. 14/58	Aug. 28	Aug. 14-Sept. 10	Sept. 11	Sept. 11	Oct. 20	14	**Dec. 18/58**
Standards	Aug. 14	Aug. 28	Aug. 14-Oct. 8	Oct. 9	No	—	10	**Dec. 18**
Pompons	Aug. 21	Sept. 4	Aug. 21-Sept. 17	Sept. 18	Sept. 18	Oct. 20	14	**Dec. 25**
Standards	Aug. 21	Sept. 4	Aug. 21-Oct. 15	Oct. 16	No	—	10	**Dec. 25**
Pompons	Aug. 28	Sept. 11	Aug. 28-Sept. 24	Sept. 25	Sept. 25	Oct. 20	14	**Jan. 1/59**
Standards	Aug. 28	Sept. 11	Aug. 28-Oct. 22	Oct. 23	No	—	10	**Jan. 1**
Pompons	Sept. 4	Sept. 18	Sept. 4-Oct. 1	Oct. 2	Oct. 2	Oct. 20	14	**Jan. 8**
Standards	Sept. 4	Sept. 18	Sept. 4-Oct. 29	Oct. 30	No	—	10	**Jan. 8**
Pompons	Sept. 4	Sept. 18	Sept. 4-Oct. 8	Oct. 9	Oct. 9	Oct. 20	14	**Jan. 15**
Standards	Sept. 4	Sept. 18	Sept. 4-Nov. 5	Nov. 6	No	—	10	**Jan. 15**

VARIETIES FOR THIS SCHEDULE ON OPPOSITE PAGE

*Preferred varieties for this schedule
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 1

VARIETIES for schedules on bottom of preceding page

Standards

White
*Fred Shoesmith (New)
*Mefo
Imp. Ind. White (New)
Ind. White

Yellow
*Yel. Fred Shoesmith (New)
*Yel. Mefo
Imp. Ind. Yellow
Ind. Yellow

Pink
*Ind. Pink
Merriment
Lavender Queen

Bronze
*Ind. Bronze
Dk. Ind. Bronze
Garnet King

Pompons

White
*Acclaim
Elegance (New)
Silversmith (After Jan. 1)
Icecap (New)
Snowcap
Snowcrest

Yellow
*Golden Acclaim
*Yel. Acclaim
Coronation (New)
Golden Elegance (New)
Sun Valley (New)
Ill. Brighteyes (New)
Cinderella

Pink
*Alvoda
Debutante

Bronze
Christmas Greetings
Cracker Jack (New)
Galaxy

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Sept. 11/58	Sept. 25	Sept. 11-Oct. 15	Oct. 16	Oct. 16	Oct. 20	14	**Jan. 22/59**
Standards	Sept. 11	Sept. 25	Sept. 11-Nov. 12	Nov. 13	No	—	10	**Jan. 22**
Pompons	Sept. 18	Oct. 2	Sept. 18-Oct. 22	Oct. 23	No	—	14	**Jan. 29**
Standards	Sept. 18	Oct. 2	Sept. 18-Nov. 19	Nov. 20	No	—	10	**Jan. 29**
Pompons	Sept. 25	Oct. 9	Sept. 25-Oct. 29	Oct. 30	No	—	14	**Feb. 5**
Standards	Sept. 25	Oct. 9	Sept. 25-Nov. 26	Nov. 27	No	—	10	**Feb. 5**
Pompons	Oct. 2	Oct. 16	Oct. 2-Nov. 5	Nov. 6	No	—	14	**Feb. 12**
Standards	Oct. 2	Oct. 16	Oct. 2-Dec. 3	Dec. 4	No	—	10	**Feb. 12**
Pompons	Oct. 9	Oct. 23	Oct. 9-Nov. 12	Nov. 13	No	—	14	**Feb. 19**
Standards	Oct. 9	Oct. 23	Oct. 9-Dec. 10	Dec. 11	No	—	10	**Feb. 19**
Pompons	Oct. 16	Oct. 30	Oct. 16-Nov. 19	Nov. 20	No	—	14	**Feb. 26**
Standards	Oct. 16	Oct. 30	Oct. 16-Dec. 17	Dec. 18	No	—	10	**Feb. 26**

VARIETIES for above schedules

Standards

White
*Mefo
*Fred Shoesmith (New)
Imp. Ind. White
Ind. White

Yellow
*Yel. Mefo
*Yel. Fred Shoesmith (New)
Imp. Ind. Yellow
Ind. Yellow
Cream Mefo

Pink
*Ind. Pink
Lavender Queen

Bronze
*Ind. Bronze
Dk. Ind. Bronze
Valentine (New)

Pompons

White
*Acclaim
*Silversmith (Best after Feb. 1)
Icecap (New)
Snowcrest
Satellite (After Feb. 1)

Yellow
*Golden Acclaim
*Yel. Acclaim
Coronation (New)
Sun Valley (New)
Corsair
Ill. Brighteyes (New)
Cinderella
Dk. Yel. Satellite (After Feb. 1)

Pink
*Alvoda
Debutante
Delmar (12 week variety)
Eminence (New)

Bronze
*Christmas Greetings
Cracker Jack (New)
Galaxy

*Preferred varieties for this schedule
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 1

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Oct. 16/58	Oct. 30	Oct. 16-Dec. 3	Dec. 4	No	—	13	**March 5/59**
Standards	Oct. 16	Oct. 30	Oct. 16-Dec. 24	Dec. 25	No	—	10	**March 5**
Pompons	Oct. 23	Nov. 6	Oct. 23-Dec. 10	Dec. 11	No	—	13	**March 12**
Standards	Oct. 23	Nov. 6	Oct. 23-Dec. 31	Jan. 1/59	No	—	10	**March 12**

VARIETIES for above schedules

Standards

White
*Mefo
*Fred Shoesmith (New)
Imp. Ind. White
Ind. White

Yellow
*Yel. Mefo
*Yel. Fred Shoesmith (New)
Imp. Ind. Yellow
Ind. Yellow
Ind. Gold

Pink
*Ind. Pink
Lavender Queen

Bronze
*Ind. Bronze
Dk. Ind. Bronze

Pompons

White
*Acclaim
Satellite
Ill. Glacier
Belray

Yellow
*Yel. or Gold Acclaim
Corsair
Dk. Yel. Satellite

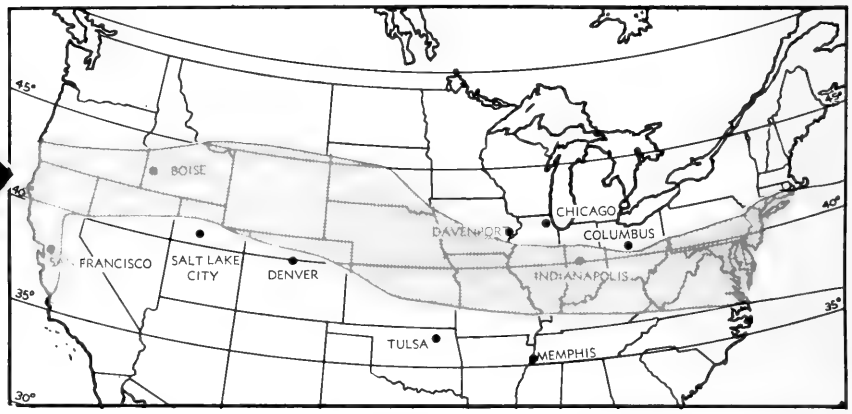
Pink
*Alvoda
Debutante
Jubilation (New)

Bronze
Galaxy
Cracker Jack (New)
Olnura

FOR GROWERS IN THIS AREA

ZONE 2

USE SCHEDULES BELOW (Thru page 74)



	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Nov. 7/57	Nov. 21	Nov. 7-Jan.1/58	Jan. 2	No	—	11	**Mar. 20/58**
Standards	Nov. 7	Nov. 21	Nov. 7-Jan. 8	Jan. 9	No	—	10	**Mar. 20**
Pompons	Nov. 14	Nov. 28	Nov. 14-Jan. 8	Jan. 9	No	—	11	**Mar. 27**
Standards	Nov. 14	Nov. 28	Nov. 14-Jan. 15	Jan. 16	No	—	10	**Mar. 27**

VARIETIES for above schedules

Standards

White
*Ind. White
*Fred Shoesmith (New)
Queens Lace
(Note: In areas where March-April tends to be cool and cloudy, growers may find Mefo superior to Indianapolis until eary April.)

Yellow
*Imp. Ind. Yellow
Gold Lace
Ind. Yellow
Luyona

Pink
*Ind. Pink
Lavender Queen
Mary Garden

Bronze
*Dk. Ind. Bronze
Ind. Bronze

Pompons

White
*Shasta
*Paramount
Belray
Igloo
Iceberg
Whitetop

Yellow
*Yel. Shasta
*Yel. Paramount
Yel. Igloo
Forty Niner
Yel. Iceberg (New)

Pink
*Masterpiece
*Delmar
Jubilation (New)
Portrait
Almega

Bronze
*Rusticon
Olnura

FOR GROWERS IN ZONE 2

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Nov. 21/57	Dec. 5	Nov. 21-Jan. 15	Jan. 16	Mar. 15	Note 1	11	**Apr. 3/58**
Standards	Nov. 21	Dec. 5	Nov. 21-Jan. 22	Jan. 23	Mar. 15	Note 1	10	**Apr. 3**
Pompons	Nov. 21	Dec. 12	Nov. 21-Jan. 22	Jan. 23	Mar. 15	Note 1	11	**Apr. 10**
Standards	Nov. 21	Dec. 12	Nov. 21-Jan. 29	Jan. 30	Mar. 15	Note 1	10	**Apr. 10**
	Dec. 5	Dec. 26	Dec. 5-Feb. 5	Feb. 6	Mar. 15	Note 1	10	**Apr. 17**
	Dec. 12	Jan. 2/58	Dec. 12-Feb. 12	Feb. 13	Mar. 15	Note 1	10	**Apr. 24**
	Dec. 26	Jan. 16	Dec. 26-Feb. 19	Feb. 20	Mar. 15	Note 1	10	**May 1**
	Jan. 2/58	Jan. 23	Jan. 2/58-Feb. 26	Feb. 27	Mar. 15	Note 1	10	**May 8**
	Jan. 16	Feb. 6	Jan. 16-Mar. 5	Mar. 6	Mar. 15	Note 1	10	**May 15**
	Jan. 23	Feb. 13	Jan. 23-Mar. 12	Mar. 13	Mar. 15	Note 1	10	**May 22**
	Jan. 30	Feb. 20	Jan. 30-Mar. 19	Mar. 20	Mar. 20	Note 1	10	**May 29**

VARIETIES for above schedules

Standards

White
*Ind. White
*Fred Shoesmith (New)
Queens Lace

Yellow
*Imp. Ind. Yellow
Gold Lace
Ind. Yellow
Luyona

Pink
*Ind. Pink
Lavender Queen
Mary Garden

Bronze
*Dk. Ind. Bronze
Ind. Bronze

Pompons

White
*Iceberg
*Shasta
Ill. Igloo
Whitetop
Ill. Snowdrift
Pinocchio
Keepsake
(After May 15)
Pacesetter

Yellow
*Yel. Shasta
*Yel. Iceberg (New)
Yel. Igloo
Starbright
Mary Hall
(After May 1)

Pink
*Bluechip
*Portrait
Bonnie
Pennant
Delight

Bronze
*Rusticon
Olnura
Bronzechip (New)
Nectarine

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Feb. 13/58	Mar. 6	Feb. 13-Mar. 26	Mar. 27	Mar. 27	Note 1	10	**June 5/58**
Feb. 20	Mar. 13	Feb. 20-Apr. 2	Apr. 3	Apr. 3	Note 1	10	**June 12**
Feb. 27	Mar. 20	Feb. 27-Apr. 9	Apr. 10	Apr. 10	Note 1	10	**June 19**
Mar. 6	Mar. 27	Mar. 6-Apr. 16	Apr. 17	Apr. 17	Note 1	10	**June 26**
Mar. 13	Apr. 3	Mar. 13-Apr. 23	Apr. 24	Apr. 24	Note 1	10	**July 3**
Mar. 20	Apr. 10	Mar. 20-Apr. 30	May 1	May 1	Note 1	10	**July 10**

VARIETIES for above schedules

Standards

White
*Giant Betsy Ross
*Ind. White
Fred Shoesmith (New)
Queens Lace

Yellow
*Good News
*Imp. Ind. Yellow
Gold Lace
Ind. Yellow
Luyona

Pink
Ind. Pink
Lavender Queen
Mary Garden

Bronze
Detroit News
Dk. Ind. Bronze

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Shasta
(Best if cooled after June 15)
*Iceberg
Ill. Igloo
Keepsake
Whitetop (Needs cooling in hot weather)
*Pinocchio
Pacesetter
Snowdrift
(Best if cooled)

Yellow
*Yel. Beauregard
*Mary Hall
*Yel. Shasta
(Best if cooled)
Yel. Igloo
Yel. Iceberg (New)
Starbright

Pink
*Bluechip
Portrait
Bonnie
Delight

Bronze
Rusticon
Beauregard
Dk. Beauregard (New)
Bronzechip (New)

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

FOR GROWERS IN ZONE 2

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Mar. 27/58	Apr. 17	Mar. 27-May 7	May 8	May 8	Note 1	10	**July 17/58**
Apr. 3	Apr. 24	Apr. 3-May 14	May 15	May 15	Note 1	10	**July 24**
Apr. 17	May 1	Apr. 17-May 21	May 22	May 22	Note 1	10	**July 31**
Apr. 24	May 8	Apr. 24-May 28	May 29	May 29	Note 1	10	**Aug. 7**
May 1	May 15	May 1-May 31	June 1	June 5	Note 1	10	**Aug. 14**
May 8	May 22	May 8-May 31	June 1	June 12	Note 1	10	**Aug. 21**
May 15	May 29	May 15-May 31	June 1	June 19	Note 1	10	**Aug. 28**

VARIETIES for above schedules

Standards

White
*Giant Betsy Ross
Ind. White
Wh. Pink Chief
Sentinel

Yellow
*Good News (One extra week of long days improves stem & flower size)
Ind. Yellow
Ind. Gold

Pink
Ind. Pink
Lavender Queen
Laughter

Bronze
Detroit News
Mrs. Roy

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Iceberg
*Keepsake
Ill. Igloo
Shasta (Better under cooling)
Alaska (For Aug. only)
Silvertone

Yellow
*Yel. Beauregard
*Yel. Iceberg (New)
Yel. Shasta (Better under cooling)
Crescendo
Dandy
Starbright

Pink
*Bluechip
Pinkette
Pennant
Delight

Bronze
*Beauregard
Dk. Beauregard (New)
Gaiety
Jetfire

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
	May 22/58	June 5	May 22-May 31	June 1	June 26	Note 1	10	**Sept. 4/58**
	May 29	June 12	May 29-May 31	June 1	July 3	Note 1	10	**Sept. 11**
	June 5	June 19	No	—	July 10	Note 1	10	**Sept. 18**
	June 12	June 26	July 14-July 16	July 17	July 17	Note 1	10	**Sept. 25**
	June 19	July 3	July 14-July 23	July 24	July 24	Note 1	10	**Oct. 2**
	June 26	July 10	July 14-July 30	July 31	July 31	Sept. 25	10	**Oct. 9**
Pompons	July 3	July 17	July 14-July 30	July 31	July 31	Sept. 30	11	**Oct. 16**
Standards	July 3	July 17	July 14-Aug. 6	Aug. 7	Aug. 7	Sept. 25	10	**Oct. 16**
Pompons	July 10	July 24	July 14-Aug. 6	Aug. 7	Aug. 7	Sept. 30	11	**Oct. 23**
Standards	July 10	July 24	July 14-Aug. 13	Aug. 14	Aug. 14	Sept. 25	10	**Oct. 23**
Pompons	July 17	July 31	July 17-Aug. 13	Aug. 14	Aug. 14	Sept. 30	11	**Oct. 30**
Standards	July 17	July 31	July 17-Aug. 20	Aug. 21	Aug. 21	Sept. 25	10	**Oct. 30**

VARIETIES for above schedules

Standards

White
*Ind. White
*Giant Betsy Ross (Until Sept. 15)
Fred Shoesmith (New)

Yellow
*Ind. Yellow
*Good News (Until Sept. 15) (Needs extra week of lights)
Ind. Gold
Yel. Fred Shoesmith (New)

Pink
*Ind. Pink
Dk. Orchid Queen
Laughter

Bronze
*Ind. Bronze
*Detroit News (Till Sept. 15)
Mrs. Roy

Pompons

White
*Iceberg
*Shasta
Whitetop (After Oct. 1)
Illini Igloo
Pinocchio
Ill. Snowdrift
Silver Cloud

Yellow
*Yel. Beauregard
*Yel. Iceberg (New)
*Yel. Shasta
Gold Coast
Yel. Igloo
Starbright

Pink
*Bluechip
Bonnie
Portrait
Delight

Bronze
*Beauregard
Dk. Beauregard (New)
Jetfire
Rubicon
Gaiety

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

FOR GROWERS IN ZONE 2

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	July 24/58	Aug. 7	July 24-Aug. 20	Aug. 21	Aug. 21	Sept. 30	11	**Nov. 6/58**
Standards	July 24	Aug. 7	July 24-Aug. 27	Aug. 28	Aug. 28	Sept. 25	10	**Nov. 6**
Pompons	July 31	Aug. 14	July 31-Aug. 27	Aug. 28	Aug. 28	Sept. 30	11	**Nov. 13**
Standards	July 31	Aug. 14	July 31-Sept. 3	Sept. 4	Sept. 4	Sept. 25	10	**Nov. 13**
Pompons	Aug. 7	Aug. 21	Aug. 7-Sept. 3	Sept. 4	Sept. 4	Sept. 30	11	**Nov. 20**
Standards	Aug. 7	Aug. 21	Aug. 7-Sept. 10	Sept. 11	Sept. 11	Sept. 25	10	**Nov. 20**
Pompons	Aug. 14	Aug. 28	Aug. 14-Sept. 10	Sept. 11	Sept. 11	Sept. 30	11	**Nov. 27**
Standards	Aug. 14	Aug. 28	Aug. 14-Sept. 17	Sept. 18	Sept. 18	Sept. 25	10	**Nov. 27**
Pompons	Aug. 14	Aug. 28	Aug. 14-Sept. 17	Sept. 18	Sept. 18	Sept. 30	11	**Dec. 4**
Standards	Aug. 14	Aug. 28	Aug. 14-Sept. 24	Sept. 25	No	—	10	**Dec. 4**
Pompons	Aug. 21	Sept. 4	Aug. 21-Sept. 24	Sept. 25	Sept. 25	Sept. 30	11	**Dec. 11**
Standards	Aug. 21	Sept. 4	Aug. 21-Oct. 1	Oct. 2	No	—	10	**Dec. 11**
Pompons	Aug. 21	Sept. 4	Aug. 21-Oct. 1	Oct. 2	No	—	11	**Dec. 18**
Standards	Aug. 21	Sept. 4	Aug. 21-Oct. 8	Oct. 9	No	—	10	**Dec. 18**
Pompons	Aug. 28	Sept. 11	Aug. 28-Oct. 8	Oct. 9	No	—	11	**Dec. 25**
Standards	Aug. 28	Sept. 11	Aug. 28-Oct. 15	Oct. 16	No	—	10	**Dec. 25**

VARIETIES for above schedules

Standards

White
*Fred Shoesmith (New)
Mefo (After Dec. 15)
Ind. White
Imp. Ind White (After Dec. 15)

Yellow
*Yel. Fred Shoesmith (New)
Yel. Mefo (After Dec. 15)
Ind. Yellow
Imp. Ind. Yellow (After Dec. 15)

Pink
*Ind. Pink
Lavender Queen

Bronze
*Ind. Bronze

Pompons

White
*Paramount (Superior after Dec. 1—not recommended for pinch crops.)
*Shasta
*Iceberg
*Whitetop & Feathertop
Illini Igloo
Little America (Nov. only)
Ill. Snowdrift (Improved by interrution after Dec. 1)

Yellow
*Yel. Paramount (See note on white Paramount
*Yel. Shasta
*Yel. Beauregard (Nov. 15-30)
*Yel. Iceberg (New)
Golden Chord
Yel. Igloo

Pink
*Portrait
*Delmar (Clears in 11 weeks)
Almega
Jubilation (New)
Ill. Springtime

Bronze
*Rusticon
Thelma
Rubicon
Beauregard
Rubaiyat (After Nov. 1)
Ill. Warpaint (After Nov. 1)

Clark Floral Company, Lafayette, Indiana (Mr. Lewis Clark above) operates greenhouses, a fine retail shop—plus a wholesale department. Year round pot mums, also standards and pomps, are an important part of the year's production on this range. Incidentally, for a good look at some effective "self-service" selling of spring plants, etc., stop in here someday in late May.

*Preferred varieties for this schedule.

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 2

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Sept. 4/58	Sept. 18	Sept. 4-Sept. 24	Sept. 25	Sept. 25	Oct. 20	14	**Jan. 1/59**
Standards	Sept. 4	Sept. 18	Sept. 4-Oct. 22	Oct. 23	No	—	10	**Jan. 1**
Pompons	Sept. 11	Sept. 25	Sept. 11-Oct. 1	Oct. 2	Oct. 2	Oct. 20	14	**Jan. 8**
Standards	Sept. 11	Sept. 25	Sept. 11-Oct. 29	Oct. 30	No	—	10	**Jan. 8**
Pompons	Sept. 11	Sept. 25	Sept. 11-Oct. 8	Oct. 9	Oct. 9	Oct. 20	14	**Jan. 15**
Standards	Sept. 11	Sept. 25	Sept. 11-Nov. 5	Nov. 6	No	—	10	**Jan. 15**
Pompons	Sept. 18	Oct. 2	Sept. 18-Oct. 15	Oct. 16	Oct. 16	Oct. 20	14	**Jan. 22**
Standards	Sept. 18	Oct. 2	Sept. 18-Nov. 12	Nov. 13	No	—	10	**Jan. 22**
Pompons	Sept. 25	Oct. 9	Sept. 25-Oct. 22	Oct. 23	No	—	14	**Jan. 29**
Standards	Sept. 25	Oct. 9	Sept. 25-Nov. 19	Nov. 20	No	—	10	**Jan. 29**
Pompons	Oct. 2	Oct. 16	Oct. 2-Oct. 29	Oct. 30	No	—	14	**Feb. 5**
Standards	Oct. 2	Oct. 16	Oct. 2-Nov. 26	Nov. 27	No	—	10	**Feb. 5**
Pompons	Oct. 9	Oct. 23	Oct. 9-Nov. 5	Nov. 6	No	—	14	**Feb. 12**
Standards	Oct. 9	Oct. 23	Oct. 9-Dec. 3	Dec. 4	No	—	10	**Feb. 12**
Pompons	Oct. 16	Oct. 30	Oct. 16-Nov. 12	Nov. 13	No	—	14	**Feb. 19**
Standards	Oct. 16	Oct. 30	Oct. 16-Dec. 10	Dec. 11	No	—	10	**Feb. 19**
Pompons	Oct. 23	Nov. 6	Oct. 23-Nov. 19	Nov. 20	No	—	14	**Feb. 26**
Standards	Oct. 23	Nov. 6	Oct. 23-Dec. 17	Dec. 18	No	—	10	**Feb. 26**
Pompons	Oct. 23	Nov. 6	Oct. 23-Dec. 3	Dec. 4	No	—	13	**Mar. 5**
Standards	Oct. 23	Nov. 6	Oct. 23-Dec. 24	Dec. 25	No	—	10	**Mar. 5**

VARIETIES for above schedules

Standards

White
*Fred Shoesmith (New)
*Mefo
*Imp. Ind. White (New)
Ind. White

Yellow
*Yel. Fred Shoesmith (New)
*Yel. Mefo
*Imp. Ind. Yellow
Ind. Yellow

Pink
*Ind. Pink
Merriment
Lavender Queen

Bronze
*Ind. Bronze
Dk. Ind. Bronze
Garnet King

(Note: In the more southerly parts of Zone 2, growers may find Indianapolis superior to Mefo at this time.)

Pompons

White
*Acclaim
Elegance (New)
Icecap (New)
Snowcap
Snowcrest

Yellow
*Golden Acclaim
*Yel. Acclaim
Coronation (New)
Golden Elegance (New)
Sun Valley (New)
Ill. Brighteyes (New)
Cinderella

Pink
*Alvoda
Debutante

Bronze
Christmas Greetings
Cracker Jack (New)
Galaxy

Dick Hart, of George B. Hart, Inc., Rochester, New York, looking over some Indianapolis from their year round production at nearby Fairport. The Hart range has been famous for two generations for quality Roses—and still is heavy in that crop. However, considerations of relative profit, plus the need for diversifying, has resulted in a substantial year round Mum program at Fairport—very capably done, by the way, by Charlie Butler, in charge of production.

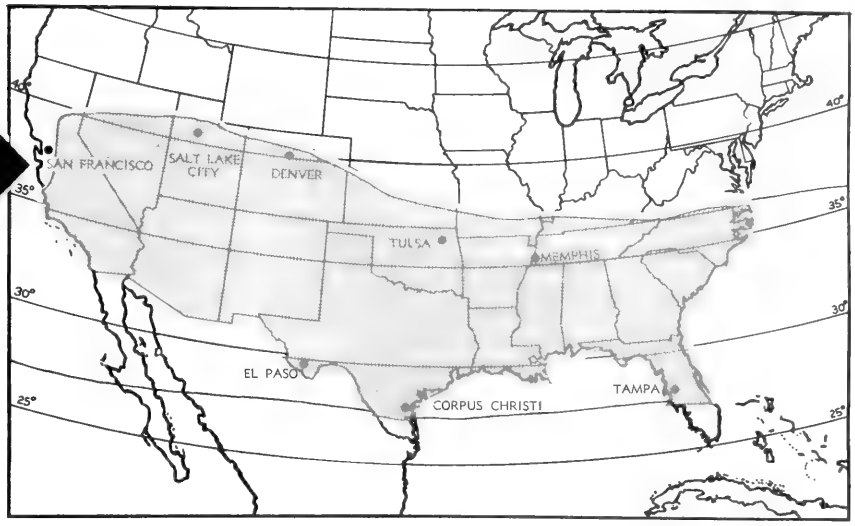
*Preferred varieties for this schedule.

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN THIS AREA

ZONE 3

USE SCHEDULES BELOW (Thru page 78)



Note

It is always difficult to generalize to the extent that these tables require. In many areas covered by Zone 3 shown above, winters are considerably warmer and brighter than average. In these areas, good stem length and quality on both mums and pomps can be produced in less time than these tables specify.

For example: in some southwestern sections, growers successfully grow single stem standards (Indianapolis varieties) with only 3 weeks of long days year round—3 weeks plant to lights off date. The tables that follow call for as much as 6 weeks of long days on crops to flower in early April, 5 weeks thru much of the winter.

Also some growers report that many varieties will flower in fewer weeks after lights are turned off than the catalog response periods specify. Indianapolis is cataloged as a 10 week variety (10 weeks from start of short days to flower). Under some conditions it will flower in nine weeks or even less.

By reducing the long day period to 3 weeks year round, and allowing only 9 weeks of short days, it is possible to flower 4 crops of Indianapolis per bed per year. It is suggested that too close a schedule not be undertaken without a year's experience on more leisurely schedules.

Our Mum Planning Service will be glad to help if there are any questions about this.

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Nov. 7/57	Nov. 21	Nov. 7-Jan. 1/58	Jan. 2/58	No	—	10	**Mar. 13/58**
Nov. 14	Nov. 28	Nov. 14-Jan. 8	Jan. 9	No	—	10	**Mar. 20**
Nov. 14	Dec. 5	Nov. 14-Jan. 15	Jan. 16	No	—	10	**Mar. 27**
Nov. 21	Dec. 12	Nov. 21-Jan. 22	Jan. 23	No	—	10	**Apr. 3**
Nov. 28	Dec. 19	Nov. 28-Jan. 29	Jan. 30	No	—	10	**Apr. 10**
Dec. 12	Jan. 2	Dec. 12-Feb. 5	Feb. 6	Apr. 1	Note 1	10	**Apr. 17**
Dec. 19	Jan. 9	Dec. 19-Feb. 12	Feb. 13	Apr. 1	Note 1	10	**Apr. 24**
Jan. 2/58	Jan. 23	Jan. 2-Feb. 19	Feb. 20	Apr. 1	Note 1	10	**May 1**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Ind. White	*Imp. Ind. Yellow	*Ind. Pink	*Dk. Ind. Bronze
*Fred Shoesmith (New)	Yel. Fred Shoesmith (New)	Lavender Queen	Ind. Bronze
Queens Lace	Gold Lace	Mary Garden	
	Ind. Yellow		
	Luyona		

Pompons

White	Yellow	Pink	Bronze
*Iceberg	*Yel. Shasta	*Bluechip	*Rusticon
*Shasta	*Yel. Iceberg (New)	*Portrait	Olnura
Ill. Igloo	Yel. Igloo	Bonnie	Bronzechip (New)
Whitetop	Starbright	Pennant	Nectarine
Ill. Snowdrift	Mary Hall	Delight	
Pinocchio			
Keepsake			
Pacesetter			

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 3

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Jan. 9/58	Jan. 30	Jan. 9-Feb. 26	Feb. 27	Apr. 1	Note 1	10	**May 8/58**
Jan.23	Feb. 13	Jan. 23-Mar. 5	Mar. 6	Apr. 1	Note 1	10	**May 15**
Jan. 30	Feb. 20	Jan. 30-Mar. 12	Mar. 13	Apr. 1	Note 1	10	**May 22**
Feb. 6	Feb. 27	Feb. 6-Mar. 19	Mar. 20	Apr. 1	Note 1	10	**May 29**
Feb. 13	Mar. 6	Feb. 13-Mar. 26	Mar. 27	Apr. 1	Note 1	10	**June 5**
Feb. 20	Mar. 13	Feb. 20-Apr. 2	Apr. 3	Apr. 3	Note 1	10	**June 12**
Feb. 27	Mar. 20	Feb. 27-Apr. 9	Apr. 10	Apr. 10	Note 1	10	**June 19**
Mar. 6	Mar. 27	Mar. 6-Apr. 16	Apr. 17	Apr. 17	Note 1	10	**June 26**
Mar. 13	Apr. 3	Mar. 13-Apr. 23	Apr. 24	Apr. 24	Note 1	10	**July 3**
Mar. 20	Apr. 10	Mar. 20-Apr. 30	May 1	May 1	Note 1	10	**July 10**

VARIETIES for above schedules

Standards

White
*Giant Betsy Ross
*Ind. White
Queens Lace

Yellow
*Good News
*Imp. Ind. Yellow
Gold Lace
Ind. Yellow
Luyona

Pink
Ind. Pink
Lavender Queen
Mary Garden

Bronze
Detroit News
Dk. Ind. Bronze
Ind. Bronze

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Shasta
(Best if cooled after May 15
*Iceberg
Ill. Igloo
Keepsake
Whitetop (needs cooling in hot weather)
Pinocchio
Pacesetter
Snowdrift
(Best if cooled)

Yellow
*Yel. Beauregard
(After May 15)
*Mary Hall
Yel. Shasta
(Best if cooled)
Yel. Igloo
Yel. Iceberg (New)
Starbright

Pink
*Bluechip
Portrait
Bonnie
Delight

Bronze
*Rusticon
Beauregard
(After May 15)
Dk. Beauregard
(New)
(After May 15)
Bronzechip (New)

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Mar. 27/58	Apr. 17	Mar. 27-May 7	May 8	May 8	Note 1	10	**July 17/58**
Apr. 3	Apr. 24	Apr.3-May 14	May 15	May 15	Note 1	10	**July 24**
Apr. 17	May 1	Apr. 17-May 21	May 22	May 22	Note 1	10	**July 31**
Apr. 24	May 8	Apr. 24-May 28	May 29	May 29	Note 1	10	**Aug. 7**
May 1	May 15	May 1-June 4	June 5	June 5	Note 1	10	**Aug. 14**
May 8	May 22	May 8-June 11	June 12	June 12	Note 1	10	**Aug. 21**
May 15	May 29	May 15-June 18	June 19	June 19	Note 1	10	**Aug. 28**
May 22	June 5	May 22-June 25	June 26	June 26	Note 1	10	**Sept. 4**
May 29	June 12	May 29-July 2	July 3	July 3	Note 1	10	**Sept. 11**
June 5	June 19	June 5-July 9	July 10	July 10	Note 1	10	**Sept. 18**
June 12	June 26	June 12-July 16	July 17	July 17	Note 1	10	**Sept. 25**

VARIETIES for above schedules

Standards

White
*Giant Betsy Ross
Ind. White
Wh. Pink Chief
Sentinel

Yellow
*Good News (one extra week of long days improves stem and flower size)
Ind. Yellow
Ind. Gold

Pink
Ind. Pink
Lavender Queen
Laughter

Bronze
Detroit News
Mrs. Roy

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

Pompons

White
*Iceberg
*Keepsake
Ill. Igloo
Shasta
(Better under cooling)
Alaska (For Aug. only)
Silvertone

Yellow
*Yel. Beauregard
*Yel. Iceberg (New)
Yel. Shasta
(Better under cooling)
Crescendo
Dandy
Starbright

Pink
*Bluechip
Pinkette
Pennant
Delight

Bronze
*Beauregard
Dk. Beauregard
(New)
Gaiety
Jetfire

(Note: Bronzes and pinks not recommended for hot weather flowering without cooling—due to fading.)

FOR GROWERS IN ZONE 3

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
June 19/58	July 3	June 19-July 23	July 24	July 24	Sept. 25	10	**Oct. 2/58**
June 26	July 10	June 26-July 30	July 31	July 31	Sept. 25	10	**Oct. 9**
July 3	July 17	July 3-Aug. 6	Aug. 7	Aug. 7	Sept. 25	10	**Oct. 16**
July 10	July 24	July 10-Aug. 13	Aug. 14	Aug. 14	Sept. 25	10	**Oct. 23**
July 17	July 31	July 17-Aug. 20	Aug. 21	Aug. 21	Sept. 25	10	**Oct. 30**
July 24	Aug. 7	July 24-Aug. 27	Aug. 28	Aug. 28	Sept. 25	10	**Nov. 6**
July 31	Aug. 14	July 31-Sept. 3	Sept. 4	Sept. 4	Sept. 25	10	**Nov. 13**
Aug. 7	Aug. 21	Aug. 7-Sept. 10	Sept. 11	Sept. 11	Sept. 25	10	**Nov. 20**
Aug. 14	Aug. 28	Aug. 14-Sept. 17	Sept. 18	Sept. 18	Sept. 25	10	**Nov. 27**
Aug. 21	Sept. 4	Aug. 21-Sept. 24	Sept. 25	No	—	10	**Dec. 4**
Aug. 28	Sept. 11	Aug. 28-Oct. 1	Oct. 2	No	—	10	**Dec. 11**
Aug. 28	Sept. 11	Aug. 28-Oct. 8	Oct. 9	No	—	10	**Dec. 18**
Sept. 4	Sept. 18	Sept. 4-Oct. 15	Oct. 16	No	—	10	**Dec. 25**
Sept. 11	Sept. 25	Sept. 11-Oct. 22	Oct. 23	No	—	10	**Jan. 1/59**
Sept. 18	Oct. 2	Sept. 18-Oct. 29	Oct. 30	No	—	10	**Jan. 8**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Ind. White	*Ind. Yellow	*Ind. Pink	*Ind. Bronze
Fred Shoesmith (New)	Ind. Gold	Dk. Orchid Queen	Mrs. Roy
	Yel. Fred Shoesmith (New)	Laughter	

Pompons

White	Yellow	Pink	Bronze
*Iceberg	*Yel. Beauregard	*Bluechip	*Beauregard
*Shasta	*Yel. Iceberg (New)	Bonnie	Dk. Beauregard (New)
Whitetop	*Yel. Shasta	Portrait	Jetfire
Illini Igloo	Gold Coast	Delight	Rubicon
Pinocchio	Yel. Igloo		Gaiety
Ill. Snowdrift	Starbright		
Silver Cloud			

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Sept. 18/58	Oct. 2	Sept. 18-Oct. 29	Oct. 30	No	—	11	**Jan. 15/59**
Standards	Sept. 18	Oct. 2	Sept. 18-Nov. 5	Nov. 6	No	—	10	**Jan. 15**
Pompons	Sept. 25	Oct. 9	Sept. 25-Nov. 5	Nov. 6	No	—	11	**Jan. 22**
Standards	Sept. 25	Oct. 9	Sept. 25-Nov. 12	Nov. 13	No	—	10	**Jan. 22**
Pompons	Oct. 2	Oct. 16	Oct.2-Nov. 12	Nov. 13	No	—	11	**Jan. 29**
Standards	Oct. 2	Oct. 16	Oct. 2-Nov. 19	Nov. 20	No	—	10	**Jan. 29**
Pompons	Oct. 9	Oct. 23	Oct. 9-Nov. 19	Nov. 20	No	—	11	**Feb. 5**
Standards	Oct. 9	Oct. 23	Oct. 9-Nov. 26	Nov. 27	No	—	10	**Feb. 5**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Fred Shoesmith (New)	*Yel. Fred Shoesmith (New)	Ind. Pink	Ind. Bronze
*Ind. White	*Ind. Yellow		

Pompons

White	Yellow	Pink	Bronze
*Paramount	*Yel. Paramount	*Portrait	Rusticon
*Shasta	*Yel. Shasta	Delmar	Rubicon
*Iceberg	*Yel. Iceberg (New)	Bluechip	
Whitetop	Yel. Igloo		
Ill. Igloo			

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 3

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Oct. 16/58	Oct. 30	Oct. 16-Nov. 26	Nov. 27	No	—	11	**Feb. 12/59**
Standards	Oct. 16/58	Oct. 30	Oct. 16-Dec. 3	Dec. 4	No	—	10	**Feb. 12/59**
Pompons	Oct. 23	Nov. 6	Oct. 23-Dec. 3	Dec. 4	No	—	11	**Feb. 19**
Standards	Oct. 23	Nov. 6	Oct. 23-Dec. 10	Dec. 11	No	—	10	**Feb. 19**
Pompons	Oct. 30	Nov. 13	Oct. 30-Dec. 10	Dec. 11	No	—	11	**Feb. 26**
Standards	Oct. 30	Nov. 13	Oct. 30-Dec. 17	Dec. 18	No	—	10	**Feb. 26**
Pompons	Oct. 30	Nov. 13	Oct. 30-Dec. 17	Dec. 18	No	—	11	**Mar. 5**
Standards	Oct. 30	Nov. 13	Oct. 30-Dec. 24	Dec. 25	No	—	10	**Mar. 5**
Pompons	Nov. 6	Nov. 20	Nov. 6-Dec. 24	Dec. 25	No	—	11	**Mar. 12**
Standards	Nov. 6	Nov. 20	Nov. 6-Dec. 31	Jan. 1/59	No	—	10	**Mar. 12**
Pompons	Nov. 13	Nov. 27	Nov. 13-Dec. 31	Jan. 1	No	—	11	**Mar. 19**
Standards	Nov. 13	Nov. 27	Nov. 13-Jan. 7	Jan. 8	No	—	10	**Mar. 19**
Pompons	Nov. 13	Dec. 4	Nov. 13-Jan. 7	Jan. 8	No	—	11	**Mar. 26**
Standards	Nov. 13	Dec. 4	Nov. 13-Jan. 14	Jan.15	No	—	10	**Mar. 26**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
*Ind. White	*Imp. Ind. Yellow	*Ind. Pink	*Dk. Ind. Bronze
*Fred Shoesmith (New)	Gold Lace	Lavender Queen	Ind. Bronze
Queen's Lace	Ind. Yellow	Mary Garden	
	Luyona		

Pompons

White	Yellow	Pink	Bronze
*Iceberg	*Yel. Shasta	*Bluechip	*Rusticon
*Shasta	*Yel. Iceberg (New)	*Portrait	Olnura
*Paramount	*Yel. Paramount	Bonnie	Bronzechip (New)
Ill. Igloo	Yel. Igloo	Pennant	Nectarine
Whitetop	Starbright	Delight	
Ill. Snowdrift			
Pinocchio			
Pacesetter			

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken
2. For single stemmed crops, plant cuttings on pinch date.

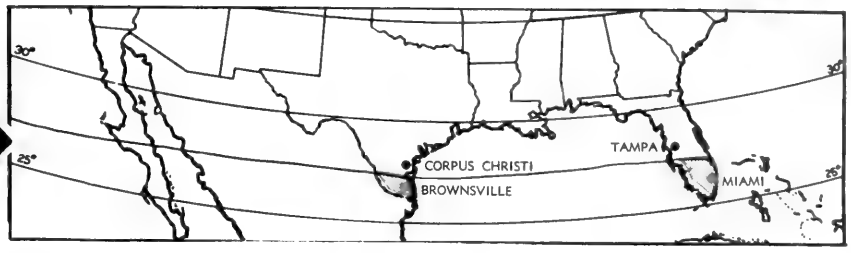
A very nice block of Shasta—flowered March 18 at Evergreen Floral Company, Denver. Earl Coble and Mr. O. J. Steidel in the photo. Quality and production like this at the height of the winter period illustrates the exceptionally favorable sunlight supply available to the Denver area in the winter. Above production part of a regular year round program here—replacing part of the Roses which have been the major crop here for years.

Experimental year round Mum production under plastic at West Chicago. In the photo (from the left), Charles Crownover, Jack Stinson, Geo. J. Ball sales representatives; Vic Ball. Generally speaking, standards of quality comparable to greenhouse production were produced right through the winter and spring under plastic—but there were problems. See June, 1957 GROWER TALKS for more details.

ZONE 4

FOR GROWERS IN THIS AREA

USE SCHEDULES BELOW (Thru page 81)



	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Nov.7/57	Nov. 28	Nov. 7-Dec. 18	Dec. 19	No	—	11	**Mar. 6/58**
Standards	Nov. 7	Nov. 28	Nov. 7-Dec. 25	Dec. 26	No	—	10	**Mar. 6**
Pompons	Nov. 14	Dec. 5	Nov. 14-Dec. 25	Dec. 26	No	—	11	**Mar. 13**
Standards	Nov. 14	Dec. 5	Nov. 14-Jan. 1/58	Jan. 2	No	—	10	**Mar. 13**
Pompons	Nov. 21	Dec. 12	Nov. 21-Jan. 1	Jan. 2	No	—	11	**Mar. 20**
Standards	Nov. 21	Dec. 12	Nov. 21-Jan. 8	Jan. 9	No	—	10	**Mar. 20**
Pompons	Nov. 28	Dec. 19	Nov. 28-Jan. 8	Jan. 9	No	—	11	**Mar. 27**
Standards	Nov. 28	Dec. 19	Nov. 28-Jan. 15	Jan. 16	No	—	10	**Mar. 27**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
Ind. White	Imp. Ind. Yellow Ind. Yellow	Ind. Pink	Dk. Ind. Bronze Ind. Bronze

Pompons

White	Yellow	Pink	Bronze
*Whitetop *Iceberg Ill. Igloo Belray Shasta White Taffeta Encore Pristine (After Mar. 15)	*Yel. Iceberg (New) *Yel. Beauregard (Best after Feb. 15) Lollipop Yel. Igloo Yel. Shasta Gold Coast (After Mar. 15)	*Bluechip *Portrait (Jan. 1-Mar. 15) Bonnie Taffeta	*Beauregard Rubicon Rubaiyat Bronzechip (New)

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Dec. 12/57	Jan. 2/58	Dec. 12-Jan. 22	Jan. 23	No	—	10	**Apr. 3/58**
Dec. 19	Jan. 9	Dec. 19-Jan. 29	Jan. 30	Apr. 1	Note 1	10	**Apr. 10**
Dec. 26	Jan. 16	Dec. 26-Feb. 5	Feb. 6	Apr. 1	Note 1	10	**Apr. 17**
Jan. 2/58	Jan. 23	Jan. 2-Feb. 12	Feb. 13	Apr. 1	Note 1	10	**Apr. 24**
Jan. 9	Jan. 30	Jan. 9-Feb. 19	Feb. 20	Apr. 1	Note 1	10	**May 1**
Jan. 16	Feb. 6	Jan. 16-Feb. 26	Feb. 27	Apr. 1	Note 1	10	**May 8**
Jan. 23	Feb. 13	Jan. 23-Mar. 5	Mar. 6	Apr. 1	Note 1	10	**May 15**
Jan. 30	Feb. 20	Jan. 30-Mar. 12	Mar. 13	Apr. 1	Note 1	10	**May 22**
Feb. 6	Feb. 27	Feb. 6-Mar. 19	Mar. 20	Apr. 1	Note 1	10	**May 29**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
Gt. Betsy Ross Ind. White	Good News Ind. Yellow	Dk. Orchid Queen Ind. Pink	(Not recommended for this period)

Pompons

White	Yellow	Pink	Bronze
*Iceberg *Pristine (Best for early May) *Whitetop Shasta Ill. Igloo	*Yel. Beauregard *Yel. Iceberg (New) *Gold Coast Yel. Igloo Yel. Shasta Mary Hall Crescendo Yel. Highbrow	*Bluechip Portrait Bonnie Pink Dot	Beauregard Rubicon Bronzechip (New)

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 4

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Feb. 13/58	Mar. 6	Feb. 13-Mar. 26	Mar. 27	Apr. 1	Note 1	10	**June 5/58**
Feb. 20	Mar. 13	Feb. 20-Apr. 2	Apr. 3	Apr. 3	Note 1	10	**June 12**
Feb. 27	Mar. 20	Feb. 27-Apr. 9	Apr. 10	Apr. 10	Note 1	10	**June 19**
Mar. 6	Mar. 27	Mar. 6-Apr. 16	Apr. 17	Apr. 17	Note 1	10	**June 26**
Mar. 13	Apr. 3	Mar. 13-Apr. 23	Apr. 24	Apr. 24	Note 1	10	**July 3**
Mar. 20	Apr. 10	Mar. 20-Apr. 30	May 1	May 1	Note 1	10	**July 10**
Mar. 27	Apr. 17	Mar. 27-May 7	May 8	May 8	Note 1	10	**July 17**
Apr. 3	Apr. 24	Apr. 3-May 14	May 15	May 15	Note 1	10	**July 24**
Apr. 10	May 1	Apr. 10-May 21	May 22	May 22	Note 1	10	**July 31**
Apr. 17	May 8	Apr. 17-May 28	May 29	May 29	Note 1	10	**Aug. 7**
Apr. 24	May 15	Apr. 24-June 4	June 5	June 5	Note 1	10	**Aug. 14**
May 1	May 22	May 1-June 11	June 12	June 12	Note 1	10	**Aug. 21**
May 8	May 29	May 8-June 18	June 19	June 19	Note 1	10	**Aug. 28**
May 15	June 5	May 15-June 25	June 26	June 26	Note 1	10	**Sept. 4**
May 22	June 12	May 22-July 2	July 3	July 3	Note 1	10	**Sept. 11**
May 29	June 19	May 29-July 9	July 10	July 10	Note 1	10	**Sept. 18**
June 5	June 26	June 5-July 16	July 17	July 17	Note 1	10	**Sept. 25**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
Gt. Betsy Ross	Good News	Dk. Orchid Queen	(Not recommended)

Pompons

White	Yellow	Pink	Bronze
Iceberg	Yel. Beauregard	Bluechip	Beauregard
Pristine	Yel. Iceberg (New)	Bonnie	Rubicon
Whitetop	Crescendo		
Igloo	Gold Coast		
Shasta	Yel. Igloo		
	Mary Hall		

Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
June 12/58	July 3	June 12-July 23	July 24	July 24	Sept. 25	10	**Oct. 2/58**
June 19	July 10	June 19-July 30	July 31	July 31	Sept. 25	10	**Oct. 9**
June 26	July 17	June 26-Aug. 6	Aug. 7	Aug. 7	Sept. 25	10	**Oct. 16**
July 3	July 24	July 3-Aug. 13	Aug. 14	Aug. 14	Sept. 25	10	**Oct. 23**
July 10	July 31	July 10-Aug. 20	Aug. 21	Aug. 21	Sept. 25	10	**Oct. 30**
July 17	Aug. 7	July 17-Aug. 27	Aug. 28	Aug. 28	Sept. 25	10	**Nov. 6**
July 24	Aug. 14	July 24-Sept. 3	Sept. 4	Sept. 4	Sept. 25	10	**Nov. 13**
July 31	Aug. 21	July 31-Sept. 10	Sept. 11	Sept. 11	Sept. 25	10	**Nov. 20**
Aug. 7	Aug. 28	Aug. 7-Sept. 17	Sept. 18	Sept. 18	Sept. 25	10	**Nov. 27**
Aug. 14	Sept. 4	Aug. 14-Sept. 24	Sept. 25	No	—	10	**Dec. 4**
Aug. 21	Sept. 11	Aug. 21-Oct. 1	Oct. 2	No	—	10	**Dec. 11**
Aug. 28	Sept. 18	Aug. 28-Oct. 8	Oct. 9	No	—	10	**Dec. 18**
Sept. 4	Sept. 25	Sept. 4-Oct. 15	Oct. 16	No	—	10	**Dec. 25**
Sept. 4	Sept. 25	Sept. 4-Oct. 22	Oct. 23	No	—	10	**Jan. 1/59**
Sept. 11	Oct. 2	Sept. 11-Oct. 29	Oct. 30	No	—	10	**Jan. 8**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
Ind. White	Good News	Ind. Pink	Detroit News
	Ind. Yellow		Dk. Ind. Bronze
			Ind. Bronze

Pompons

White	Yellow	Pink	Bronze
Iceberg	Yel. Beauregard	Bluechip	Beauregard
Whitetop	Yel. Iceberg	Bonnie	Rubicon
Pristine	Gold Coast	Portrait	
Ill. Igloo	Yel. Shasta		
Shasta	Yel. Igloo		
	Mary Hall		

*Preferred varieties for this schedule

1. Stop shade on Pompons when buds show color; stop shade on October through May Standards when bud is size of a nickel; stop shade on June through September Standards when bud is taken.
2. For single stemmed crops, plant cuttings on pinch date.

FOR GROWERS IN ZONE 4

	Plant Date[2]	Pinch Date	Lighting Period	Lights Off	Start Shade	Stop Shade	Response Group	**Flowering Date**
Pompons	Sept. 18/58	Oct. 9	Sept. 18-Oct. 29	Oct. 30	No	—	11	**Jan. 15/59**
Standards	Sept. 18	Oct. 9	Sept. 18-Nov. 5	Nov. 6	No	—	10	**Jan. 15**
Pompons	Sept. 25	Oct. 16	Sept. 25-Nov.5	Nov. 6	No	—	11	**Jan. 22**
Standards	Sept. 25	Oct. 16	Sept. 25-Nov. 12	Nov. 13	No	—	10	**Jan. 22**
Pompons	Oct. 2	Oct. 23	Oct. 2-Nov. 12	Nov. 13	No	—	11	**Jan. 29**
Standards	Oct. 2	Oct. 23	Oct. 2-Nov. 19	Nov. 20	No	—	10	**Jan. 29**
Pompons	Oct. 9	Oct. 30	Oct. 9-Nov. 19	Nov. 20	No	—	11	**Feb. 5**
Standards	Oct. 9	Oct. 30	Oct. 9-Nov. 26	Nov. 27	No	—	10	**Feb. 5**
Pompons	Oct. 16	Nov. 6	Oct. 16-Nov. 26	Nov. 27	No	—	11	**Feb. 12**
Standards	Oct. 16	Nov. 6	Oct. 16-Dec. 3	Dec. 4	No	—	10	**Feb. 12**
Pompons	Oct. 23	Nov. 13	Oct. 23-Dec. 3	Dec. 4	No	—	11	**Feb. 19**
Standards	Oct. 23	Nov. 13	Oct. 23-Dec. 10	Dec. 11	No	—	10	**Feb. 19**
Pompons	Oct. 30	Nov. 20	Oct. 30-Dec. 10	Dec. 11	No	—	11	**Feb. 26**
Standards	Oct. 30	Nov. 20	Oct. 30-Dec. 17	Dec. 18	No	—	10	**Feb. 26**
Pompons	Nov. 6	Nov. 27	Nov. 6-Dec. 17	Dec. 18	No	—	11	**Mar. 5**
Standards	Nov. 6	Nov. 27	Nov. 6-Dec. 24	Dec. 25	No	—	10	**Mar. 5**
Pompons	Nov. 13	Dec. 4	Nov. 13-Dec. 24	Dec. 25	No	—	11	**Mar. 12**
Standards	Nov. 13	Dec. 4	Nov. 13-Dec. 31	Jan. 1/59	No	—	10	**Mar. 12**
Pompons	Nov. 20	Dec. 11	Nov. 20-Dec. 31	Jan. 1	No	—	11	**Mar. 19**
Standards	Nov. 20	Dec. 11	Nov. 20-Jan. 7	Jan. 8	No	—	10	**Mar. 19**
Pompons	Nov. 27	Dec. 18	Nov. 27-Jan. 7	Jan. 8	No	—	11	**Mar. 26**
Standards	Nov. 27	Dec. 18	Nov. 27-Jan. 14	Jan. 15	No	—	10	**Mar. 26**

VARIETIES for above schedules

Standards

White	Yellow	Pink	Bronze
Ind. White	Imp. Ind. Yellow Ind. Yellow	Ind. Pink	Dk. Ind. Bronze Ind. Bronze

Pompons

White	Yellow	Pink	Bronze
*Whitetop *Iceberg Ill. Igloo Belray Shasta White Taffeta Encore Pristine (After Mar. 15)	*Yel. Iceberg (New) *Yel. Beauregard (Best after Feb. 15) Lollipop Forty Niner (Till Feb. 15) Yel. Igloo Yel. Shasta Gold Coast (After March 15)	*Bluechip *Portrait (Best Jan. 1-Mar. 15) Bonnie Taffeta	*Beauregard Rubicon Rubiayat Bronzechip (New)

Year round Mums at San Lorenzo Nursery, (Torrance) Los Angeles, California. On the left, Paul Shinoda, San Lorenzo; on the right John Naydo, Geo. J. Ball Inc. Year round production of standards has been one of the major crops here for several years. Currently the crop is being produced in a "UCLA" type of peat-sand mixture and with excellent results too. Full details on the use of peat-sand for growing in the new book just published by the University of California—see GROWER TALKS November, 1957, page 9.

Pot Mums Round the Year

The past season has seen continued growth in the year round pot mum crop. The larger wholesale pot plant specialists continue to find a market for what they produce. You hear more and more of $1.75 for a **good** 6 inch—rather than the customary $1.50. Oddly enough, the biggest development in out of season pot growing seems to be among small to medium sized retail growers. A small but steady program of pot mum production with some build-up for the spring holidays and Thanksgiving seems to be a solid deal for these retail growers.

The biggest requirement here is temperature. A 60° house will do some varieties, but 65 generally will give uniform and prompt bud set on all of them. This, and the usual shade and light facilities are the main requirements.

As with cut flowers, our Ball Mum Planning Service will be glad to work out a continuous flowering pot plant program for you. See page 1 for details.

Modified Second Pinch

A "modified second pinch" has been tried by some growers. It's a very soft (high) pinch made 2-3 weeks after the first pinch. It results in more flowers per plant, perhaps 50-75% more—but all of them are smaller. Also the plant is a bit shorter and flowers 5 to 7 days later.

This pinch is made after 2 pairs of leaves have developed on the new shoots. Only the stronger shoots are pinched. Modified second pinch is only recommended for sunny seasons, not in winter.

No other change in schedule. Be sure this modified second pinch is made within 3 weeks of the start of short days.

Area Needed

For growers interested in an approximate amount of bench area needed for a given production of year round pot mums (6 inch):

An interesting comparison of three important pink pot mum varieties —at Yoders on May 7. From the left: Personality, Blue Ribbon, and Criterion. Of the first two, Blue Ribbon is definitely a deeper shade —which enables it to hold a better color even at higher summer temperatures. Also, it is a bit shorter which is always better in a pot plant. Flowers also a shade larger. Occasional growers object to Blue Ribbon as being too deep a color during the winter months. Criterion is a shade smaller in flower size, a very strong grower and often preferred for midwinter. In the photo from the left, Cliff Kraft, Mum Planning Service, G. J. B., Inc.; Bill Skou, Yoder Brothers.

To produce 50 pot mums every two weeks year round, about 380 sq. ft. of bench space will be needed. A small part of this area must be equipped for lighting; all of it must have enough heat to hold 65°.

To produce 50 pots every two weeks, by the way, is a good minimum program for the retail grower. Much less total production and less frequent flowering is usually not too practical.

Temperatures—65° does it

Definitely we recommend 65° nights (70° cloudy days, 75° clear days) for off-season pot growing. We've tried 60°; you just don't get the even bud set and flower development that you do at 65°.

After color shows, we drop them to 55°, or even less if we're holding them for a holiday.

Plants too tall?

The old cure: keep 'em dry and starved. The new one: delayed pinch.

With this new trick, another product of our floriculture schools, we are able to regulate the final height of the plant almost at will.

The year round pot mum schedules that follow take full advantage of this delayed pinch idea. If, for any reason, your pot mums flower too tall, chances are that delaying the final pinch for 5 to 7 days more next year will bring them down.

Two other pointers on too tall plants:

1. **Crowding plants** unduly makes them grow tall and chimney shaped instead of spreading. Well-grown 6 inch pot mums should need and get 1½ sq. ft. (15 x 15) in their final stages.

2. **Pinching:** with cut flowers, we get the strongest, most, and best breaks when we pinch only the top ½ inch or so out. Pot mum schedules are designed so that only 1 or 2 inches of new growth should normally occur prior to a pinch. However, due to delayed pinching, varying rates of growth, etc., plants may make up to 4-5 inches of new growth before the pinch. If only the tip of this is removed, a tall, leggy plant is coming your way. Only answer we find: cut them back to leave 2-3 inches of the new growth. In any case, leave two pairs of leaves.

Remember: new breaks are encouraged by ample nitrates, water, and sunlight (space). Most varieties if carefully grown can be kept so short they won't need staking.

Azalea pots, being somewhat shorter, are usually used for pot mums.

Several Suggestions

1. In potting Mum cuttings directly to the flowering pot (which is generally done), it helps to grade out the cuttings, putting the extra large ones together, etc. This makes for more uniformity.
2. Most good growers arrange the cuttings in a circle around the outer edge of the pot. This leaves more air and light at the center.
3. Another interesting new slant that has worked well for many growers: as the cuttings are planted into the pots, set them so that they point outwards at about a 45° angle rather than straight up. This will help still more in getting air and light into the center of the pot. It will tend to make the plant more spreading and bushy—less chimney shaped. Try it.

Here's something out of the ordinary, yet strikingly showy in low mark-up pot plants. One cutting is potted to a 3 inch pot, no long days, no pinch (right plant). Plant on the left had one week of long days—flowered about an inch taller. Variety: Delaware, flowered May 10.

Plants too short?

In most sections, the retailers prefer a plant that measures 12 inches high, 12 inches across the top of the flower head —and with 12 flowers. Just remember "12 x 12 x 12".

Mainly in the case of Wilson's White and Granite State on winter crops, plants tend to flower **too short.** The year round pot schedules that follow have allowed several weeks more of long days (lighting period) than was formerly done —to lengthen the plants. A high soft pinch on these varieties will definitely help get them to flower taller and with more breaks per stem. The added weeks of light give the plants more time to develop substance.

About rapid growth

Needless to say, all we covered about humus, feeding, ample water, etc. under cut mums applies here—with interest! After all, we're growing a lot of plants in a handful of soil, and that takes some watching. Highlights:

1. **Humus:** one fourth peat. We steam the soil—a year's supply at a time.
2. **Feeding:** Phosphate added dry as peat-manure is mixed. Nitrate and potash applied weekly (in summer) as a liquid feed. Use same rates with 25-0-25 as for cut Mums. Some excellent pot Mum specialists feed every 3 days!
3. **Water**—be sure there's good drainage, then keep them well watered, especially as they get larger. That may mean every day in hot weather (twice in hot areas). If pots are set on muddy soil, it stops up drain holes.

   In potting don't fill the pot clear full. Leaving an inch will catch more water—reduce frequency of watering.

Disbudding

In most sections, competition demands that the 10 or 12 stems on a pot mum be disbudded to one flower per stem; also side shoots are removed down the stem. Exception: the garden varieties, or any pompon grown as a pot mum. They just won't make a bigger flower, even when disbudded.

TROUBLES—A Few of the Most Common

1. Uneven bud set?

The same problem as with cut mums. For winter-spring crops, we find 65° nights gives much more even bud set and development than 60°. Good quality, too.

2. Lower leaves dry up—why?

Several reasons. One very common one is foliar nematode or foliage diseases. Generally they are worse on outdoor grown plants.

Two other reasons: overcrowding and underfeeding. Under good care, the leaves should stay on, and stay green clear to the bottom. Poor drainage seems to affect them, too.

3. Can't get over 1 or 2 breaks per cutting

As with any plant, the three main requirements for generous and prompt breaking are plenty of nitrate and potash, plenty of water, and ample sunlight (meaning **generous** spacing). Varieties differ—Bonnaffon is good. We put one more cutting per pot of poor breakers.

A good, soft cutting will always break better than a hard, wiry one.

4. Flowers rot as they open

Much the same story as with cut mums.

Several pot mum growers report good control with Parzate dust—every 3 days. Some shade in hot weather helps.

ABOUT SINGLE STEM POT MUMS

We don't recommend to any grower that he go over 100% to single stem pot Mums. But there are some angles to them that may fit your trade. The pros and cons as we see them:

Let's put down the disadvantages first. Mainly it's more cuttings—probably seven to a 6 inch pot against five for the same plant pinched. Net loss: two cuttings.

On the credit side:

1. Large, showy blooms—Indianapolis White, for example, makes fine large, showy blooms that would average ⅓ to ½ larger than the same variety pinched. They're really quite striking. It's a deluxe plant, but still finished in a six. Individual flowers ran 5½ to 6 inches in our trials. If competition in pot mums is hot on your heels, perhaps this is a way to "have the best."
2. Ordinarily, no pinch plants do not require tying. They are short, and having more plants per pot than pinched plants, tend to stand up better.
3. No more problem of getting enough breaks per plant. Indianapolis is bad on this, but nice grown "no pinch."
4. You save several weeks time on the bench—and the labor of pinching and tying, too, of course.

Here's How:

Plant 7 cuttings per 6" pot; no long days. Start short days soon as cuttings are potted. Do not pinch. Salable pot plant in 9½-10 weeks. Dark Indianapolis Yellow and Indianapolis White are best for this treatment! Try Fred Shoesmith and Yellow Shoesmith for a pleasant surprise!

Use only varieties that are normally quite short growers. The Maekawa Brothers in Seattle find that by keeping the plants on the hungry side till buds show, they flower shorter.

ABOUT "SHORT PROCEDURE"

In the descriptions (in the general variety list) each of the new 1958 pot mums is classified as "short procedure," "medium procedure," or "tall procedure." A "short procedure" variety is one that naturally tends to be quite short (Wilson's White, Delaware). These varieties generally need 2 or 3 or more weeks of lights for winter flowering to make them **tall** enough. The "tall procedure" kinds are those that are really compact growing enough for pot use, but which tend to be taller than the real short ones such as Wilson's White. Especially on summer-fall flowerings, they must be given no long days (shade same day they are potted)—and pinch must be delayed—to keep them from being **too tall.** The Indianapolis varieties are considered "tall procedure" types.

We ran into this group of showy and unusual little pot plants at Yoder's in mid-May. They were grown one cutting per 3 inch pot, no pinch and no long days. Pots were plunged into soil about 5x5 spacing, filled with soil and cuttings planted directly to the pot—and left there until flowering. This plunging greatly reduced watering, and resulted in heavier, better growth and flower size. How about some of these in your shop—for a cash and carry special? Varieties from the left: Oregon, Yellow Calypso, Delaware, and Indianapolis Yellow.

The tables that follow are based on these "short," "medium," and "tall" procedure schedules. They tend to make the very short ones some taller in winter and to make the tall ones shorter in late summer-early fall. The varieties selected are those generally considered best for the period concerned.

NUMBER OF CUTTINGS PER POT

To insure a well filled out plant, five cuttings for a 6 inch pot is generally recommended (for single pinch). A few varieties that tend to break more freely (Bonnaffon Deluxe) can be grown 4 to a six. Because breaks come more freely during the summer months, a few growers go to 4 cuttings per pot on those flowered from August thru November. However, the competitive market during the fall in many areas requires a well filled out plant that can be only accomplished by use of five cuttings per pot. Poor breakers like Indianapolis and Humdinger are apt to be thin even then with four cuttings.

Incidentally, many growers in the Northwest grow as many as half of their pot mums in **five** inch pots—and even some 4's. Bill De Jong, Pella, Iowa, grows 4's in quantity, two cuttings per pot, eight flowers (Bonnaffon). 90c wholesale.

ATTENTION SOUTHERN GROWERS:

In any areas where winters are quite sunny, open, and warm, the schedules given in the tables that follow will tend to make excessively tall plants during the winter season. In such areas, better results will be obtained if the late summer schedules given here are used year round—with perhaps one extra week of lighting added for plants to flower between January 1 and April 1.

The taller kinds (Indianapolis, Copperhead, Pacesetter) are given **no long day period** at all (even in winter) by many growers in these "sunny winter" areas. This means no lights, and in summer, shade same day cuttings are potted. To further insure against excessive height, pinch is delayed till two weeks (winter) after potting or three weeks (summer-fall crops).

Shorter growing varieties (Delaware, Wilson's White) are given one week of lights on crops to be flowered December 15 thru March 1. Rest of the year: no long days.

Single stem growing (mostly Indianapolis) is practiced quite extensively—no lights at any time of year. Indianapolis has less of a long exposed neck grown no pinch.

For any variety anywhere anytime of the year, if plants are too tall, change the schedule next year to:

1. Provide fewer (or no) long days between potting and shading (or lights off).
2. Delay the pinch still more. Up to two or three weeks between start of short days and pinch date is not uncommon.

Don't forget that other things cause tall plants: crowding, dirty glass, rooting thru the drain hole, heat delay in summer—and use of too tall varieties.

Our Ball Mum Planning Service staff and your local Ball representative are familiar with the above problem—drop us a line and we will be glad to go over **your** particular scheduling problem.

Should pot Mums be "plunged" in peat (or soil)? The Bonnaffon in the bench above (left) were plunged; those on the right, grown on bare boards. Of the two plants held by Lawrence Rerko (MPS). The one on your right was plunged—the one on the left not. Photo taken September 2. Only difference: plunged pot about one inch taller and a little lighter foliage color (too much water?) Average watering frequency reduced from once a day to several times a week Conclusion: Looks encouraging (at least for summer-fall) but beware of overwatering! Also give ample space to plants to prevent tendency to stretching.

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
Feb. 6/58 Feb. 13	Granite State Delaware, Yel. Delaware	Nov. 7/57	Nov. 28	Nov. 7-Dec. 4	No
Jan. 23 Jan. 30 Feb. 6	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties Bon. Deluxe	Nov. 7	Nov. 21	Nov. 7-Nov. 20	No
Jan. 23 Jan. 27 Jan. 30	Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Nov. 7	Nov. 28	Nov. 7-Nov. 13	No
Feb. 13 Feb. 20	Granite State Delaware, Yel. Delaware	Nov. 14	Dec. 5	Nov. 14-Dec. 11	No
Jan. 30 Feb. 6 Feb. 13	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Oregon Bon. Deluxe	Nov. 14	Nov. 28	Nov. 14-Nov. 27	No
Jan. 30 Feb. 3 Feb. 6	Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Nov. 14	Dec. 5	Nov. 14-Nov. 20	No
Feb. 20 Feb. 27	Granite State Delaware, Yel. Delaware	Nov. 21	Dec. 12	Nov. 21-Dec. 18	No
Feb. 6 Feb. 13 Feb. 20	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Oregon Bon. Deluxe	Nov. 21	Dec. 5	Nov. 21-Dec. 4	No
Feb. 6 Feb. 10 Feb. 13	Pacesetter, Little America, Yel. Pacesetter Indianapolis Varieties Valentine	Nov. 21	Dec. 12	Nov. 21-Nov. 27	No
Feb. 27 March 6	Granite State Delaware, Yel. Delaware	Nov. 28	Dec. 19	Nov. 28-Dec. 25	No
Feb. 13 Feb. 20 Feb. 27	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Oregon Bon. Deluxe	Nov. 28	Dec. 12	Nov. 28-Dec. 11	No
Feb. 13 Feb. 17 Feb. 20	Pacesetter, Little America, Yel. Pacesetter Indianapolis Varieties Valentine	Nov. 28	Dec. 19	Nov. 28-Dec. 4	No
March 6 March 13	Granite State, Wilson's White Delaware, Yel. Delaware	Dec. 5	Dec. 26	Dec. 5-Jan. 1	No
Feb. 20 Feb. 27 March 6	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Oregon Bon. Deluxe	Dec. 5	Dec. 19	Dec. 5-Dec. 18	No
Feb. 20 Feb. 24 Feb. 27	Pacesetter, Little America, Yel. Pacesetter Indianapolis Varieties Valentine	Dec. 5	Dec. 26	Dec. 5-Dec. 11	No
March 13 March 20	Granite State, Wilson's White Delaware, Yel. Delaware	Dec. 12	Jan. 2	Dec. 12-Jan. 8	No
Feb. 27 March 6 March 13	Queen of Pinks, Blue Ribbon Oregon, Criterion, Humdinger, Personality, Red Humdinger Bon. Deluxe	Dec. 12	Dec. 26	Dec. 12-Dec. 25	No
Feb. 27 March 3 March 6	Pacesetter, Little America, Yel. Pacesetter Indianapolis Varieties Valentine, Calvert's Gold	Dec. 12	Jan. 2	Dec. 12-Dec. 18	No

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
March 20 **March 27**	Granite State, Wilson's White Delaware, Yel. Delaware	Dec. 19	Jan. 9	Dec. 19-Jan. 15	No
March 6 **March 13** **March 20**	Queen of Pinks, Blue Ribbon, Luna Criterion, Humdinger, Personality, Oregon, Red Humdinger Bon. Deluxe	Dec. 19	Jan. 2	Dec. 19-Jan. 1	No
March 6 **March 10** **March 13**	Pacesetter, Portrait Varieties, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Dec. 19	Jan. 9	Dec. 19-Dec. 25	No
March 27 **April 3**	Granite State, Wilson's White Delaware, Yel. Delaware	Dec. 26	Jan. 16	Dec. 26-Jan. 22	March 15
March 6 **March 13** **March 20** **March 27**	Gardenia Queen of Pinks, Blue Ribbon, Luna Criterion, Humdinger, Personality, Oregon, Red Humdinger Bon. Deluxe	Dec. 26	Jan. 9	Dec. 26-Jan. 8	No
March 6 **March 13** **March 17** **March 20**	Lace Varieties Pacesetter, Portrait Varieties, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Dec. 26	Jan. 16	Dec. 26-Jan. 1	No
April 3 **April 10**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	Jan. 2/58	Jan. 23	Jan. 2-Jan. 29	March 15
March 13 **March 20** **March 27** **April 3**	Gardenia Queen of Pinks, Blue Ribbon, Luna Criterion, Personality, Humdinger, Oregon, Red Humdinger Bon. Deluxe	Jan. 2	Jan. 16	Jan. 2-Jan. 15	March 15
March 13 **March 20** **March 24** **March 27**	Lace Varieties Yel. Pacesetter, Pacesetter, Fred Shoesmith, Portrait Varieties Indianapolis Varieties Valentine, Calvert's Gold	Jan. 2	Jan. 23	Jan. 2-Jan. 8	No
April 10 **April 17**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	Jan. 9	Jan. 30	Jan. 9-Feb. 5	March 15
March 20 **March 27** **April 3** **April 10**	Gardenia Queen of Pinks, Blue Ribbon, Luna Criterion, Calypso Varieties, Personality, Oregon, Humdinger, Red Humdinger Bon. Deluxe	Jan. 9	Jan. 23	Jan. 9-Jan. 22	March 15
March 20 **March 27** **March 31** **April 3**	Lace Varieties Pacesetter, Portrait Varieties, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Jan. 9	Jan. 30	Jan. 9-Jan. 15	March 15
April 17 **April 24**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	Jan. 16	Feb. 6	Jan. 16-Feb. 12	March 15
March 27 **April 3** **April 10** **April 17**	Gardenia Monty, Queen of Pinks, Blue Ribbon, Luna Criterion, Calypso Varieties, Personality, Oregon, Humdinger, Red Humdinger Bon. Deluxe	Jan. 16	Jan. 30	Jan. 16-Jan. 29	March 15
March 27 **April 3** **April 7** **April 10**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Copperhead, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Jan. 16	Feb. 6	Jan. 16-Jan. 22	March 15

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
April 24 **May 1**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	Jan. 23	Feb. 13	Jan. 23-Feb. 19	March 15
April 3 **April 10** **April 17** **April 24**	Gardenia Monty, Queen of Pinks, Blue Ribbon, Luna Criterion, Calypso Varieties, Personality, Oregon, Humdinger, Red Humdinger.. Bon. Deluxe	Jan. 23	Feb. 6	Jan. 23-Feb. 5	March 15
April 3 **April 10** **April 14** **April 17**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Jan. 23	Feb. 13	Jan. 23-Jan. 29	March 15
May 1 **May 8**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	Jan. 30	Feb. 20	Jan. 30-Feb. 26	March 15
April 10 **April 17** **April 24** **May 1**	Gardenia Monty, Queen of Pinks, Blue Ribbon, Luna Criterion, Calypso Varieties, Personality, Oregon, Humdinger, Red Humdinger.. Bon. Deluxe	Jan. 30	Feb. 13	Jan. 30-Feb. 12	March 15
April 10 **April 17** **April 21** **April 24**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Jan. 30	Feb. 20	Jan. 30-Feb. 5	March 15
May 8 **May 15**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	Feb. 6	Feb. 27	Feb. 6-March 5	March 15
April 17 **April 24** **May 1** **May 8**	Gardenia Monty, Queen of Pinks, Blue Ribbon, Luna Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	Feb. 6	Feb. 20	Feb. 6-Feb. 19	March 15
April 17 **April 24** **April 28**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties	Feb. 6	Feb. 27	Feb. 6-Feb. 12	March 15
May 15 **May 22**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	Feb. 13	March 6	Feb. 13-March 12	March 15
April 24 **May 1** **May 8** **May 15**	Gardenia Monty, Blue Ribbon, Luna, Queen of Pinks Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	Feb. 13	Feb. 27	Feb. 13-Feb. 26	March 15
April 24 **May 1** **May 5**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Fred Shoesmith.. Indianapolis Varieties	Feb. 13	March 6	Feb. 13-Feb. 19	March 15
May 1 **May 8** **May 15** **May 22**	Blazing Gold, Gardenia Monty, Blue Ribbon, Luna, Queen of Pinks Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	Feb. 20	March 6	Feb. 20-March 5	March 15

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
May 1 **May 8** **May 12**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Fred Shoesmith.. Indianapolis Varieties	Feb. 20	March 13	Feb. 20-Feb. 26	March 15
May 22 **May 29**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	Feb. 27	March 13	Feb. 27-March 19	March 20
May 8 **May 15** **May 22** **May 29**	Blazing Gold, Gardenia Monty, Blue Ribbon, Luna, Queen of Pinks Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	Feb. 27	March 13	Feb. 27-March-12	March 15
May 8 **May 15** **May 19**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Fred Shoesmith.. Indianapolis Varieties	Feb. 27	March 20	Feb. 27-March 5	March 15
May 29 **June 5**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	March 6	March 20	March 6-March 26	March 27
May 15 **May 22** **May 29** **June 5**	Gardenia, Blazing Gold Monty, Blue Ribbon, Luna, Queen of Pinks Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	March 6	March 20	March 6-March 19	March 20
May 15 **May 22** **May 26**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Fred Shoesmith.. Indianapolis Varieties	March 6	March 27	March 6-March 12	March 15
June 5 **June 12**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	March 13	March 27	March 13-April 2	April 3
May 22 **May 29** **June 5** **June 12**	Gardenia, Blazing Gold Monty, Blue Ribbon, Luna, Queen of Pinks Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	March 13	March 27	March 13-March 26	March 27
May 22 **May 29** **June 2**	Lace Varieties Pacesetter, Portrait Varieties, Ill. Snowdrift, Yel. Pacesetter, Fred Shoesmith.. Indianapolis Varieties	March 13	April 3	March 13-March 19	March 20
June 12 **June 19**	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	March 20	April 3	March 20-April 9	April 10
May 29 **June 5** **June 12** **June 19**	Gardenia, Blazing Gold Monty, Blue Ribbon Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	March 20	April 3	March 20-April 2	April 3
May 29 **June 5** **June 9**	Lace Varieties Pacesetter, Portrait Varieties, Yel. Pacesetter, Susan Leighton, Yel. Leighton, Fred Shoesmith Indianapolis Varieties	March 20	April 10	March 20-March 26	March 27

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
June 5 June 12 June 16	Lace Varieties Pacesetter, Portrait Varieties, Yel. Pacesetter, Susan Leighton, Yel. Leighton.. Indianapolis Varieties	March 27	April 17	March 27-April 2	April 3
June 19 June 26	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	April 3	April 10	April 3-April 16	April 17
June 5 June 12 June 19 June 26	Blazing Gold, Gardenia Monty, Blue Ribbon Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	April 3	April 10	April 3-April 9	April 10
June 26 July 3	Granite State, Wilson's White and Yellow Yel. Delaware, Delaware	April 10	April 17	April 10-April 23	April 24
June 12 June 19 June 26 July 3	Gardenia, Blazing Gold Monty, Blue Ribbon Criterion, Calypso Varieties, Personality, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	April 10	April 17	April 10-April 16	April 17
June 12 June 19 June 23	Lace Varieties Pacesetter, Yel. Pacesetter, Susan Leighton, Yel. Leighton, Portrait Varieties, Fred Shoesmith Indianapolis Varieties	April 10	April 17	No	April 10
July 3 July 10	Wilson's White Yel. Delaware, Delaware	April 17	April 24	April 17-April 30	May 1
June 19 June 26 July 3 July 10	Gardenia, Blazing Gold Monty, Blue Ribbon Criterion, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	April 17	April 24	April 17-April 23	April 24
June 19 June 26 June 30	Lace Varieties Pacesetter, Yel. Pacesetter, Susan & Yel. Leighton, Portrait Varieties, Fred Shoesmith Indianapolis Varieties	April 17	April 24	No	April 17
July 10 July 17	Wilson's White Yel. Delaware, Delaware	April 24	May 1	April 24-May 7	May 8
June 26 July 3 July 10 July 17	Gardenia, Blazing Gold Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	April 24	May 1	April 24-April 30	May 1
June 26 July 3 July 7	Lace Varieties Pacesetter, Yel. Pacesetter Indianapolis Varieties	April 24	May 1	No	April 24
July 17 July 24	Wilson's White Delaware, Yel. Delaware	May 1	May 8	May 1-May 14	May 15
July 3 July 10 July 17 July 24	Blazing Gold, Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	May 1	May 8	May 1-May 7	May 8
July 10 July 14	Pacesetter, Yel. Pacesetter Indianapolis Varieties	May 1	May 8	No	May 1

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
July 24 **July 31**	Wilson's White Yel. Delaware, Delaware	May 8	May 15	May 8-May 21	May 22
July 10 **July 17** **July 24** **July 31**	Gardenia, Blazing Gold Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	May 8	May 15	May 8-May 14	May 15
July 17 **July 21**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	May 8	May 15	No	May 8
July 31 **Aug. 7**	Wilson's White Yel. Delaware, Delaware	May 15	May 22	May 15-May 28	May 29
July 17 **July 24** **July 31** **Aug. 7**	Gardenia, Blazing Gold Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	May 15	May 22	May 15-May 21	May 22
July 24 **July 28**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	May 15	May 22	No	May 15
Aug. 7 **Aug. 14**	Wilson's White Yel. Delaware, Delaware	May 22	May 29	May 22-May 31	June 5
July 24 **July 31** **Aug. 7** **Aug. 14**	Gardenia, Blazing Gold Blue Ribbon Criterion, Portrait Varieties, Oregon, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	May 22	May 29	May 22-May 28	May 29
July 31 **Aug. 4**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	May 22	May 29	No	May 22
Aug. 14 **Aug. 21**	Wilson's White Yel. Delaware, Delaware	May 29	June 5	May 29-May 31	June 12
July 31 **Aug. 7** **Aug. 14** **Aug. 21**	Gardenia, Blazing Gold Blue Ribbon Criterion, Portrait Varieties, Oregon, Whitehouse, Humdinger, Red Humdinger, Bon. Deluxe	May 29	June 5	May 29-May 31	June 5
Aug. 7 **Aug. 11**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	May 29	June 5	No	May 29
Aug. 21 **Aug. 28**	Wilson's White Yel. Delaware, Delaware	June 5	June 12	No	June 19
Aug. 7 **Aug. 14** **Aug. 21** **Aug. 28**	Gardenia Blue Ribbon Criterion, Portrait Varieties, Oregon, Whitehouse, Humdinger, Red Humdinger, Bon. Deluxe	June 5	June 12	No	June 12
Aug. 14 **Aug. 18**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	June 5	June 12	No	June 5
Aug. 28 **Sept. 4**	Wilson's White Yel. Delaware, Delaware	June 12	June 19	No	June 26
Aug. 14 **Aug. 21** **Aug. 28** **Sept. 4**	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger Bon. Deluxe	June 12	June 19	No	June 19
Aug. 21 **Aug. 25**	Pacesetter, Yel. Pacesetter Indianapolis Varieties	June 12	June 19	No	June 12

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
Sept. 4 Sept. 11	Wilson's White Yel. Delaware, Delaware	June 19	June 26	No	July 3
Aug. 21 Aug. 28 Sept. 4 Sept. 11	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Whitehouse, Humdinger, Red Humdinger, Personality Bon. Deluxe	June 19	June 26	No	June 26
Aug. 28 Sept. 1	Pacesetter, Yel. Pacesetter Indianapolis Varieties	June 19	June 26	No	June 19
Sept. 11 Sept. 18	Wilson's White Delaware, Yel. Delaware	June 26	July 3	No	July 10
Aug. 28 Sept. 4 Sept. 11 Sept. 18	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Humdinger, Red Humdinger, Personality, Whitehouse Bon. Deluxe	June 26	July 3	No	July 3
Sept. 4 Sept. 8	Pacesetter, Yel. Pacesetter Indianapolis Varieties	June 26	July 3	No	June 26
Sept. 18 Sept. 25	Wilson's White Delaware, Yel. Delaware	July 3	July 10	July 14-July 16	July 17
Sept. 4 Sept. 11 Sept. 18 Sept. 25	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Humdinger, Red Humdinger, Whitehouse, Personality Bon. Deluxe	July 3	July 10	No	July 10
Sept. 4 Sept. 11 Sept. 15	Lace Varieties Pacesetter, Yel. Pacesetter Indianapolis Varieties	July 3	July 10	No	July 3
Sept. 25 Oct. 2	Wilson's White Delaware, Yel. Delaware	July 10	July 17	July 14-July 23	July 24
Sept. 11 Sept. 18 Sept. 25 Oct. 2	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Humdinger, Red Humdinger, Whitehouse, Personality Bon. Deluxe	July 10	July 17	July 14-July 16	July 17
Sept. 11 Sept. 18 Sept. 22	Lace Varieties Pacesetter, Yel. Pacesetter Indianapolis Varieties	July 10	July 17	No	July 10
Oct. 2 Oct. 9	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	July 17	July 24	July 17-July 30	July 31
Sept. 18 Sept. 25 Oct. 2 Oct. 9	Gardenia Blue Ribbon Oregon, Criterion, Portrait Varieties, Personality, Whitehouse, Red Humdinger, Calypso Varieties, Humdinger Bon. Deluxe	July 17	July 24	July 17-July 23	July 24
Sept. 18 Sept. 25 Sept. 29	Lace Varieties Pacesetter, Yel. Pacesetter Indianapolis Varieties	July 17	July 24	No	July 17
Oct. 9 Oct. 16	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	July 24	July 31	July 24-Aug. 6	Aug. 7
Sept. 25 Oct. 2 Oct. 9 Oct. 16	Gardenia Monty, Queen of Pinks, Blue Ribbon Oregon, Criterion, Portrait Varieties, Personality, Humdinger, Calypso Varieties, Whitehouse, Red Humdinger Bon. Deluxe	July 24	July 31	July 24-July 30	July 31

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
Sept. 25 **Oct. 2** **Oct. 6**	Lace Varieties Pacesetter, Yel. Pacesetter, Susan and Yel. Leighton Indianapolis Varieties	July 24	July 31	No	July 24
Oct. 16 **Oct. 23**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	July 31	Aug. 7	July 31-Aug. 13	Aug. 14
Oct. 2 **Oct. 9** **Oct. 16** **Oct. 23**	Gardenia Monty, Queen of Pinks, Blue Ribbon Oregon, Criterion, Portrait Varieties, Personality, Humdinger, Calypso Varieties, Whitehouse, Red Humdinger Bon. Deluxe	July 31	Aug. 7	July 31-Aug. 6	Aug. 7
Oct. 2 **Oct. 9** **Oct. 13**	Lace Varieties Pacesetter, Yel. Pacesetter, Susan and Yel. Leighton Indianapolis Varieties	July 31	Aug. 7	No	July 31
Oct. 23 **Oct. 30**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware	Aug. 7	Aug. 14	Aug. 7-Aug. 20	Aug. 21
Oct. 9 **Oct. 16** **Oct. 23** **Oct. 30**	Gardenia Monty, Queen of Pinks, Blue Ribbon Oregon, Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Aug. 7	Aug. 14	Aug. 7-Aug. 13	Aug. 14
Oct. 9 **Oct. 16** **Oct. 20**	Lace Varieties Pacesetter, Yel. Pacesetter, Susan and Yel. Leighton Indianapolis Varieties	Aug. 7	Aug. 14	No	Aug. 7
Oct. 30 **Nov. 6**	Granite State, Wilson's White and Yellow Delaware, Yel. Delaware, Oregon	Aug. 7	Aug. 21	Aug. 7-Aug. 27	Aug. 28
Nov. 6 **Nov. 13**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Aug. 14	Aug. 28	Aug. 14-Spt. 3	Sept. 4
Oct. 16 **Oct. 23** **Oct. 30** **Nov. 6**	Gardenia Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Aug. 14	Aug. 21	Aug. 14-Aug. 20	Aug. 21
Oct. 16 **Oct. 23** **Oct. 27**	Lace Varieties Pacesetter, Yel. Pacesetter, Susan and Yel. Leighton Indianapolis Varieties	Aug. 14	Aug. 21	No	Aug. 14
Oct. 23 **Oct. 30** **Nov. 3** **Nov. 6**	Lace Varieties Pacesetter, Yel. Pacesetter, Susan and Yel. Leighton Indianapolis Varieties Calvert's Gold	Aug. 14	Sept. 4	Aug. 14-Aug. 20	Aug. 21
Nov. 13 **Nov. 20**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Aug. 21	Sept. 4	Aug. 21-Sept. 10	Sept. 11
Oct. 23 **Oct. 30** **Nov. 6** **Nov. 13**	Gardenia Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Aug. 21	Aug. 28	Aug. 21-Aug. 27	Aug. 28

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
Oct. 30 **Nov. 6** **Nov. 10** **Nov. 13**	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Aug. 21	Sept. 11	Aug. 21-Aug. 27	Aug. 28
Nov. 20 **Nov. 27**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Aug. 28	Sept. 11	Aug. 28-Sept. 17	Sept. 18
Oct. 30 **Nov. 6** **Nov. 13** **Nov. 20**	Gardenia Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Aug. 28	Sept. 4	Aug. 28-Sept. 3	Sept. 4
Nov. 6 **Nov. 13** **Nov. 17** **Nov. 20**	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith, Copperhead Indianapolis Varieties Calvert's Gold	Aug. 28	Sept. 18	Aug. 28-Sept. 3	Sept. 4
Nov. 27 **Dec. 4**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Sept. 4	Sept. 18	Sept. 4-Sept. 24	No
Nov. 13 **Nov. 20** **Nov. 27**	Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Sept. 4	Sept. 11	Sept. 4-Sept. 10	Sept. 11
Nov. 13 **Nov. 20** **Nov. 24** **Nov. 27**	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties Calvert's Gold	Sept. 4	Sept. 25	Sept. 4-Sept. 10	Sept. 11
Dec. 4 **Dec. 11**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Sept. 11	Sept. 25	Sept. 11-Oct. 1	No
Nov. 20 **Nov. 27** **Dec. 4**	Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Calypso Varieties, Personality, Whitehouse, Red Humdinger Bon. Deluxe	Sept. 11	Sept. 18	Sept. 11-Sept. 17	Sept. 18
Nov. 20 **Nov. 27** **Dec. 1** **Dec. 4**	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Copperhead, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Sept. 11	Oct. 2	Sept. 11-Sept. 17	Sept. 18
Dec. 11 **Dec. 18**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Sept. 18	Oct. 2	Sept. 18-Oct. 8	No
Nov. 27 **Dec. 4** **Dec. 11**	Monty, Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Red Humdinger, Personality Bon. Deluxe	Sept. 18	Sept. 25	Sept. 18-Sept. 24	No
Nov. 27 **Dec. 4** **Dec. 8** **Dec. 11**	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Sept. 18	Oct. 9	Sept. 18-Sept. 24	No
Dec. 18 **Dec. 25**	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Sept. 25	Oct. 9	Sept. 25-Oct. 15	No
Dec. 4 **Dec. 11** **Dec. 18**	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Red Humdinger, Personality Bon. Deluxe	Sept. 25	Oct. 2	Sept. 25-Oct. 1	No

SINGLE PINCH POT PLANT SCHEDULES

Flower	Varieties	Pot	Pinch	Lighting Period 40-45° Latitude (1)	Shade
Dec. 4 Dec. 11 Dec. 15 Dec. 18	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Sept. 25	Oct. 16	Sept. 25-Oct. 1	No
Dec. 25 Jan. 1/59	Granite State, Wilson's White and Yellow Delaware, Oregon, Yel. Delaware	Oct. 2	Oct. 16	Oct. 2-Oct. 22	No
Dec. 11 Dec. 18 Dec. 25	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Red Humdinger, Personality Bon. Deluxe	Oct. 2	Oct. 9	Oct. 2-Oct. 8	No
Dec. 11 Dec. 18 Dec. 22 Dec. 25	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine, Calvert's Gold	Oct. 2	Oct. 23	Oct. 2-Oct. 8	No
Jan. 1/59 Jan. 8	Granite State Delaware, Oregon, Yel. Delaware	Oct. 2	Oct. 23	Oct. 2-Oct. 29	No
Dec. 18 Dec. 25 Jan. 1	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties, Humdinger, Red Humdinger, Personality Bon. Deluxe	Oct. 2	Oct. 16	Oct. 2-Oct. 15	No
Jan. 8 Jan. 15	Granite State Delaware, Oregon, Yel. Delaware	Oct. 9	Oct. 30	Oct. 9-Nov. 5	No
Dec. 25 Jan. 1 Jan. 8	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties Bon. Deluxe	Oct. 9	Oct. 23	Oct. 9-Oct. 22	No
Dec. 18 Dec. 25 Dec. 29 Jan. 1/59	Lace Varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Oct. 9	Oct. 30	Oct. 9-Oct. 15	No
Jan. 15 Jan. 22	Granite State Delaware, Oregon, Yel. Delaware	Oct. 16	Nov. 6	Oct. 16-Nov. 12	No
Jan. 1 Jan. 8 Jan. 15	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties Bon. Deluxe	Oct. 16	Oct. 30	Oct. 16-Oct. 29	No
Dec. 25 Jan. 1 Jan. 5 Jan. 8	Lace varieties Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Oct. 16	Nov. 6	Oct. 16-Oct. 22	No
Jan. 22 Jan. 29	Granite State Delaware, Oregon, Yel. Delaware	Oct. 23	Nov. 13	Oct. 23-Nov. 19	No
Jan. 8 Jan. 15 Jan. 22	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties Bon. Deluxe	Oct. 23	Nov. 6	Oct. 23-Nov. 5	No
Jan. 8 Jan. 12 Jan. 15	Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Oct. 23	Nov. 13	Oct. 23-Oct. 29	No
Jan. 29 Feb. 5	Granite State Delaware, Yel. Delaware	Oct. 30	Nov. 20	Oct. 30-Nov. 26	No
Jan. 15 Jan. 22 Jan. 29	Queen of Pinks, Blue Ribbon Criterion, Portrait Varieties Bon. Deluxe	Oct. 30	Nov. 13	Oct. 30-Nov. 12	No
Jan. 15 Jan. 19 Jan. 22	Pacesetter, Little America, Yel. Pacesetter, Fred Shoesmith Indianapolis Varieties Valentine	Oct. 30	Nov. 20	Oct. 30-Nov. 5	No

TWO-PINCH POT PLANTS FOR

Normal Season Flowering

NO LIGHTS—NO SHADE

Variety	Color	Pot cuttings (4 per 6" pot)	First Pinch	Final Pinch	Flowering Date
Fairyland	Pink	July 28	Aug. 4	Aug. 24	Oct. 15
Blazing Gold	Yellow	July 28	Aug. 4	Aug. 24	Oct. 23
Granite State	White	July 28	Aug. 4	Aug. 24	Oct. 25
Glitters (and Bronze)	Bronze	Aug. 4	Aug. 11	Sept. 6	Oct. 28
Queen's Lace	White	Aug. 4	Aug. 11	Sept. 6	Nov. 1
Gold Lace	Yellow	Aug. 4	Aug. 11	Sept. 6	Nov. 1
Royal Bronze	Bronze	Aug. 4	Aug. 11	Sept. 6	Nov. 1
Wilson's White	White	July 28	Aug. 4	Aug. 26	Nov. 1
Indianapolis White, Dark Yellow and Pink	—	Aug. 4	Aug. 11	Sept. 6	Nov. 5
Delaware	Bronze	Aug. 4	Aug. 11	Sept. 1	Nov. 8
Criterion	Pink	Aug. 4	Aug. 11	Sept. 1	Nov. 8
Humdinger	Dark Orchid	Aug. 4	Aug. 11	Sept. 1	Nov. 10
Copperhead	Bronze	Aug. 11	Aug. 18	Sept. 10	Nov. 10
Queen of Pinks	Pink	Aug. 4	Aug. 11	Sept. 1	Nov. 10
Cadet	Red	Aug. 4	Aug. 11	Sept. 6	Nov. 14
Bonnaffon De Luxe	Yellow	Aug. 4	Aug. 11	Sept. 5	Nov. 20
Helen Frick	Pink	Aug. 11	Aug. 18	Sept. 15	Nov. 20
White Frick	White	Aug. 11	Aug. 18	Sept. 15	Nov. 20
Red Rolinda	Red	Aug. 4	Aug. 11	Sept. 8	Nov. 23
White Lady	White	Aug. 11	Aug. 18	Sept. 15	Nov. 25
Beautiful Lady	Pink	Aug. 11	Aug. 18	Sept. 15	Nov. 25
Sungold	Yellow	Aug. 4	Aug. 11	Sept. 8	Nov. 25

Note: If extra heavy plants are desired, pot cuttings two weeks earlier than the above dates. Make first pinch one week earlier than indicated, final pinch as shown above.

SINGLE PINCH

The trend is definitely toward single pinch growing on normal pot Mums—a faster crop, shorter plants, easier.

To grow the above varieties single pinch for normal date, pot cuttings 7 to 10 days in advance of final pinch date given above, and pinch on final pinch date shown.

Exceptions: The following varieties should be potted **14 days** before final pinch date: Fairyland, Glitters, Lace varieties, Royal Bronze, Indianapolis varieties, Lady varieties, Copperhead, and Frick. These varieties tend to grow tall. The pinch date has been delayed, hence the potting date is farther in advance of the pinch date. Example, Indianapolis: pot August 23, pinch September 6, flower November 5.

3½-inch garden mums produced for the cash and carry trade at Texas A. & M. College under "Doc" DeWerth. These colorful little fellows can be flowered in early May, no shade, no lights, by simply potting cuttings March 2, holding 60° till buds show. Details page 1. Note attractively wrapped plant on right 49c cash and carry! Photo: Texas A. & M. College.

INDEX OF VARIETIES

Variety — Page

A

Acclaim 23
Adagio 48
Admiral 50
Admiration 49
Aglow 37, 49
Alaska 20
Albatross 9
Albion 44
Alert 31, 48
Alex Cummings 47
Allegro 48
Almega 35
Alpena 49
Alvoda 37
Ambassador 8
Amber Bright 16
Amberhue 40
Amelia 46
Amer. Bty. Kramer....37
Anaconda 17
Andante 38, 50
Ann Chew 17
Antique 16
Apache 48
Apr. Queen 16
Apr. Valencia 41
Arcadia 20
Argyle 36
Aristocrat 15
Aristocrat (H) 47
Arlora 45
Artist's Delight 47
Astoria 25, 45
Autumn Beauty 48
Autumn Song 48
Avalanche 19, 43
Aviator 49
Aztec 28

B

Balcombe Perfection....17
Barbara Fuller 38
Barbara Small 46
Barcarole 27
Bayonne 38
Beauregard 39
Beauregard Sup. 40
Beautiful Lady 35
Belray 23
Benora 19, 44
Betty 47
Betty Rose 31
Bittersweet 39
Blanche Litwiller 46
Blazing Gold 11
Blazing West 12
Blizzard 19, 44
Bluechip 32
Blue Ribbon 14
Bojangles 29
Bonfire 49
Bon. Deluxe 13
Bonnie 33
Brick Red Kramer....41
Brigadoon 28
Bright Forecast 25, 45
Brighton Yel. 12
Brilliancy 26
Br. Buckingham 38
Br. Calypso 17
Bronzechip 38
Br. Daisy 38
Br. Dot 38
Br. Enchantress 41
Br. Frick 18
Br. Goldsmith 40
Br. Jubilation 40
Br. Kramer 41
Br. Mary McArthur 38
Br. Masterpiece 40
Br. Minstrel 41
Br. Minuet 40
Br. Mistletoe 18
Br. Orch. Queen 17
Br. Pandora 39
Br. Peter John 18
Br. Pomponette 48
Br. Portrait 39
Br. Queen (H) 48
Br. Riviera 41
Br. Wonder 48
Buccaneer 38
Buckskin 38
Bunbu 14
Burgundy 49
Burgundy Kramer....37
Butterball 11
Buttercup (H) 46
Butterscotch 39

C

Cadenza 33
Calcite 43
Calif. Wh. Daisy 19
Calumet 37, 50
Calvert's Gold 18
Calvert's Pink 15
Cameo 23
Camille Bauman 9
Canary Dot 26
Canary Wonder 44
Candlelight 43
Candytuft 31
Caprice 49
Capt. Cook 31
Capt. J. Smith 47
Cardinal Spoon 49
Carmine Queen....37, 49
Carnival 37, 49
Carolyn Yosick 31
Carrara 23
Cavalcade 41
Cecelia 47
Cecil Beed 46
Celebration 34
Celebrity 35
Celestra 11
Chairman 12
Chalice 14
Chalk Cliff 21
Champ 23
Champion Cushion 48
Chas. Nye 25, 45
Charm Spoon 47
Chattanooga 11
Cheerful 33
Chevron 39
Chippa Red 48
Chippewa 46
Chiquita 25, 45
Chopin 50
Christina 8
Chris. Columbus....19, 43
Christ. Greetings 41
Christ. Star 41
Cinderella 30
Citation 31, 48
Claret 41
Classic 19, 44
Climax 39
Comd. Cushion 48
Companion 48
Constellation 28
Copperhead 39
Copper Queen 17
Coppersmith 49
Coquette 47
Coralhue 37, 50
Cordova 23
Coronation 30
Corsair 30
Cotillion 23
Courageous 49
Courtier 47
Crackerjack 41
Cream Mefo 13
Cream Shasta 28
Crescendo 28
Crest 19
Crimson Valencia....41
Criterion 33
Crown Jewell 48
Crowning Glory 49
Crusader 50
Crystal Beauty 23
Crystallite 20
Crystal Maid 43
Crystal Queen 10
Cupid 31, 48
Cydonia 49

D

Dandy 26
Dk. Almega 35
Dk. Beauregard 39
Dk. Br. Masterpiece 40
Dk. Br. Minstrel 41
Dk. Br. Minuet 40
Dk. Bulkeley 33
Dk. Calumet (H) 49
Darkchip 32
Dk. Enchantress 36
Dk. Ind. Bronze 16
Dk. Ind. Yel. 12
Dk. Linda Lou 33
Dk. Norma 34
Dk. Orch. Queen 15
Dk. Pk. Peter John 15
Dk. Pk. Buckingham 32
Dk. Pk. L. I. Beauty....35
Dk. Pk. Minstrel 36
Dk. Pk. Pandora 33
Dk. Portrait 32
Dk. Red Gold 48
Dk. Reward 31
Dk. Riviera 36
Dk. Taffeta 34
Dk. Valencia 35
Dk. Yel. Cameo 30
Dk. Yel. Chattanooga 13
Dk. Yel. Satellite 30
Darryl Chew 17
Dauntless 14
Daybreak 28
Dean Kay 46
Debonair 41
Debutante 36
Dec. Glory 11
Dec. Gold 30
Dec. White 11
D. D. Ahrens 43
Defiance 36
Defiance (H) 44
Delaware 16
Delight 32
Delight (H) 44
Delmar 35
Desire 35
Detroit News 16
Dolli-Ette 37, 49
Dolomite 24
Dorothy Hyde 16
Dream Girl 47
Dubonnet Valencia 36
Duchess 16
Dynamo 21

E

Early Bronze 48
Early Crimson 48
Early Gold 44
Early Harvest 48
Early Kathleen 48
Early Yellow 44
Early Yel. Daisy 26
Echo 19
Ed. Seidwitz 15
Edna Rowley 47
Elegance 24
Elite Cushion 49
Eliz. Hood 31, 48
Eminence 36
Empress 36
Enchantress 36
Encore 21
Ensign 9
Enterprise 31, 48
Ermine 22
Esquire 29
Ethel Waters 45
Ethrelda 31
Etude 29
Evangeline 46
Evelyn Devaney 47

F

Falcon 40
Fanfare 28
Fascination 47
Feathertop 21
Festival 40
Fiesta 49
Firebird 38
Firecracker 49
Fire Engine 49
Firefly 38
Flamboyant 48
Flame Minstrel 41
Football Bronze 49
Forever Amber 40
Fortune 23
Forty-Niner 28
Fred Shoesmith 10
Fred Yule 16
Freida 35
Freedom 20
Freya 45
Friendly Rival 13
Fuchsia Fairy 31, 48

G

Gaiety 38
Gail 31
Galaxy 41
Gardenia 19, 43
Garnet King 17
Garza 24
Gena Harwood 16
Genista 44
Geo. Luxton 48
Georgia 12
Gt. Betsy Ross 9
Giltglow 39
Ginger 38
Gladness 46
Gladiator 49
Gladys Pearson 18
Glamour 32
Gloria 43
Glow Worm 48
Gold Ball 29
Gold Coast 26
Golden Acclaim 30
Golden Anniversary 30
Golden Carpet 44
Golden Chord 28
Golden Cushion 44
Golden Elegance 30
Golden Gopher 44
Golden Herald 26
Golden Hours 44
Golden Mistletoe 14
Golden Mrs. Ross 13
Golden Pearson 13
Goldenrod 29
Golden Shoesmith 13
Golden Snowbound 30
Golden Spoon 45
Golden Sunset 44
Golden Wonder 44
Goldfield 45
Goldfinch 26
Gold Lace 12
Gold Lode 11, 46
Goldrush 25, 45
Goldsmith 29
Gondola 26
Good News 12
Gordon Wells 13
Grand Slam 35
Granite State 8
Greco's Carnation 22
Gypsy 39

H

Halo 20
Handsome 32
Happiness 26
Harbinger 48
Harlequin 41
Harvester 13
Harvest Golden 11
Heather Bloom 46
Heirloom 24
Helen Bogue 47
Helen Frick 15
Helma 50
Heritage 36
Heyday 28
Highbrow 22
Highlander 29
Hilda Bergen 16
Holiday (H) 49
Holiday 41
Honeycomb 44
Honeydew 13
Honeymoon 27
Honeysweet 46
Horizon 19, 43
Humdinger 33
Huntsman 37, 49

I

Ice Cream 21
Iceberg 21
Icecap 24
Ill. Accent 33
Ill. Alba 24
Ill. Bonbon 29
Ill. Bountiful 23
Ill. Brighteyes 30
Ill. Cascade 25
Ill. Formal 35
Ill. Glacier 23
Ill. Gold 29
Ill. Gold Cup 28
Ill. Goldilocks 29
Ill. Igloo 21
Ill. Peace 23
Ill. Redwood 40
Ill. Roseglow 35
Ill. Snowbound 25
Ill. Snowdrift 21
Ill. Springtime 35
Ill. Starflower 22
Ill. Starlet 24
Ill. Sunspot 29
Ill. Wampum 29
Ill. War Paint 40
Ill. Warrior 40
Ill. Yel. Snowbound 30
Illinois 45
Imp. Br. Daisy 38
Imp. Br. Supreme 41
Imp. Dk. Beauregard ..39
Imp. Dk. Supreme 36
Imp. Early Wonder 47
Imp. Ind. White 9
Imp. Ind. Yellow 12
Imp. Pk. Minstrel 36
Imp. Red Daisy 38
Imp. Wh. Kramer 24
Imp. Wh. Supreme 24
Imp. Yel. Kramer 30
Imp. Yel. Rayonnante..13
Imp. Yel. Supreme 30
Inca 39
Incurved Delaware 16
Indiana 50
Indiana Market 10
Ind. Apricot 16
Ind. Bronze 16
Ind. Gold 12
Ind. Golden Bronze 16
Ind. Pink 14
Ind. White 9
Ind. Yellow 12
Indian Head 40
Indian Red 49
Iowa 46
Irene 19, 44
Iron Mountain 49
Ivanhoe 16
Ivory Glow 43

J

Jackpot 30
James Eadie 45
James Stewart 37, 50
Jealousy 28
Jean Elizabeth 10
Jess. Williams 43
Jessie 31
Jetfire 39
Jewell 31, 48
Jewelltone 46
Joan Helen 46
John Baumann 10
Joybringer 31, 47
Joyous 47
Jubilation 34
Jubilee (H) 49
Judith Anderson 46
J. W. Prince 15

K

Kath. Lehman 49
Keepsake 20
King's Ransom 45
Klondike 29

L

Lady's Choice 46
Larry 19, 43
Lassie 47
Laughter 15
Lav. Lady 47
Lav. Queen 15
Lee-Ette 38
Lee Powell 25, 45
Legal Tender 40
Leshara 49
Lt. Peter John 15
Lt. Pk. Enterprise 48
Lt. Pk. Minstrel 36
Lillian Doty 32
Limelight 43

INDEX OF VARIETIES, Continued

Variety Page

Linda Lou 33
Lipstick 37, 49
Little America 21
Lollipop 29
L. I. Beauty 22
Lorenzo 46
Lorraine 13
Luminary 12
Luna 9
Luxury 28
Luyona 12
Luzon 16
Lynda McLane 37
Lyric 43

M

Madonna 21
Maestro 19, 44
Magic 34
Magician 39
Mahogany Cushion 49
Majestic 50
Major Bowes 14
Major Cushion 47
Malinda Brown 47
Mamoru 16
Marblehead 8
Marg. Moeller 11
Marie DePetris 13
Marion Breedon 35
Marketeer 10
Marshmallow 43
Mary Garden 14
Mary Hall 28
Mary McArthur 31
Masquerade 47
Masterpiece 33
Masumi Pink 15
Mayfair 31, 48
Mayflower 47
Mayford's Triumph 16
Medallion 37
Mefo 10
Memento 20
Memorial 34
Mermaid 32
Merriment 15
Merrymaker 41
Meteore 14
Michigan 45
Michigan State 44
Ming 44
Minnesota 44
Minstrel 36
Minuet 35
Mirth 31
Mischief 31, 47
Mme. Cadillac 48
Mojave Gold 49
Mona 37, 49
Monarch 23
Monty 20
Monument 10
Moonbright 45
Moonglow 21
Moonlight 25, 45
Moontide 8
Moribana 12
Morocco 37, 50
Mrs. Chas. Wylie 39
Mrs. Dewey 40
Mrs. DuPont 37, 50
Mrs. Eisenhower 18
Mrs. H. Robinson 8
Mrs. Kidder 11
Mrs. Rotan 45
Mrs. Roy 17
Muriel Rice 44
Muto's Crimson 18

N

Nagona 21
Navaho 38
Nectarine 39
Nevada 22
New Marg. Mills 48
Newton 45
Nightingale 9
Nomago 16
Norona 19, 44
North Star 43
Northern Queen 47
Northwestern 49
Northwind 24
Nugano 36
Nuggets 28
Nye's Favorite 46

Variety Page

O

Oak Leaf 18
Ohio State 46
Old Lavender 47
Olive Longland 46
Olnura 40
Omega 29
Orange Beauregard 39
Orange Galaxy 41
Orangeade 49
Orch. Helen 46
Orch. Queen 15
Orch. Spoon 47
Orchid Valencia 36
Oregon 9
Orsona 48
Orway 24
Osage 43
Ostosa 19, 43

P

Pacesetter 21
Pandora 33
Paper White 43
Paradise 38
Paragon 40
Paramount 23
Parisienne 32
Pathfinder 44
Pat. Lehman 47
Paxon 38
Peggy Hoover 15
Pepita 43
Pennant 33
Personality 33
Petrisian Pink 47
Petrisian Rose 46
Pilgrim 19, 44
Pk. Chief 14
Pinkchip 32
Pk. Deluxe 15
Pk. Dot 31
Pinkette 31
Pk. Kramer 37
Pk. L. I. Beauty 35
Pk. Mistletoe 15
Pk. Peter John 15
Pk. Pockett 15
Pk. Portrait 33
Pk. Quill 46
Pk. Snowdrop 36
Pk. Supreme 36
Pk. Yamane 15
Pinocchio 20
Pippin 29
Plainsman 48
Plum 15
Poinsettia 41
Polar Ice 43
Polaris 25, 45
Pomponette 44
Popcorn 19
Portrait 32
Powderpuff 43
Prelude 31
Princess 35
Princeton 28
Priscilla 22
Pristine 19
Profile 33
Purdue 50
Purple Cushion 47
Purple Queen 46
Purple Spoon 46
Purple Star 46
Purple Waters 46

Q

Queen's Lace 8
Queen of Pinks 14

R

Radiance 37, 50
Rajah 37, 50
Ranger 40
Rayonnante 15
Real Gold 44
Red Balcombe Perf. 17
Red Cloud 49
Red Daisy 38
Red Dot 26
Red Empress 41
Red Enchantress 41
Red Enterprise 50
Red Ethrelda 38

Variety Page

Red Glitters 16
Red Glow 48
Red Gold 48
Red Humdinger 39
Red Kramer 41
Red Minstrel 41
Red Princeton 40
Red Riding Hood 49
Red Rolinda 40
Red Rust 39
Red Seneca 38
Red Velvet 37, 49
Reflection 46
Remembrance 37, 49
Resolute 38, 50
Revelation 24
Reveille 31
Reverence 44
Reward 31
Rhythm 34
Riviera 36
Rodell Imp. 25, 46
Ronnie 48
Rosa 46
Rosalind 36
Rose Delight 15
Rose Masterpiece 34
Rose Medallion 37
Rose Spoon 47
Rosita 47
Rouge Cushion 48
Roulette 45
Royal Bronze 16
Royal Robe 46
Rubaiyat 40
Rubicon 39
Ruby Breithaupt 45
Ruby Pompon 49
Rusticon 40

S

Sagamore 37
Sally 38
Sal. Pandora 33
Sal. Precose 46
Sal. Valencia 36
Sam Williston 49
Samovar 39
Sarasota 25, 46
Satellite 24
Sauterne 26
Scarlet Crimson 48
Sch. Yel. Daisy 26
Scintilation 33
Sculpture 22
Seafoam 22
Sea Gull 20
Seneca 38
Sentinel 9
Sept. Bronze 48
Sept. Cheer 49
Sept. Gold 44
Sept. Sunshine 44
Shamrock 30
Shalimar (H) 43
Shasta 21
Shibuya White 19
Silver Ball 19, 44
Silver Bow 20
Silver Cloud 20
Silvercrest 23
Silverplate 19, 44
Silver Queen 8
Silver Sheen 8
Silversmith 24
Silvertone 19
Siren 30
Sm. Cream White 14
Smith's White 11
Snow 25
Snowcap 24
Snowclad 20
Snowcrest 24
Snow Crystal 9
Snowdrop 24
Snowflurry 22
Snowline 11
Snow Queen 24
Snowstorm 23
Snow White 9
Songster 20
Sonny 47
Southdown Pink 32
Souvenir 28
Spangles 23
Spellbound 31, 47

Variety Page

Spindrift 43
Spode 45
Staccato 35
Stanley Naydo 18
Starbright 27
Stardust 21
Starlight 26
Statesman 27
Sterling 10
Stuart Ogg 38
Stylish 47
Success 49
Successor 46
Sulphur Spoon 44
Sultan 29
Sunapee 44
Sunburst 11, 46
Sunfire 27
Sunglow 12
Sungold 13
Sunnyside 29
Sunray 27
Sunrise 30
Sunstone 45
Sunup 26
Sun Valley 30
Surfside 23
Susan Leighton 9
Susanne Miller 29
Sweepstake 45
Sybil 38

T

Taffeta 34
Talisman 38, 50
Talmeda 25
Tangerine 44
Tapestry 46
Tempo 32
Thanks. Pink 15
The Titan 39
Thelma 40
Themesong 8
Theresa Stone 43
Thistledown 20
Thomas Johnson 32
Thyra 33
Tiffany Rose 47
Time 47
Tip Top 21
Titania 48
Tobin's Yel. 14
Topaz 41
Topflight 25
Toronto 37, 49
Tranquility 45
Treasure 25, 45
Trenton 24
Troubadour 47
Tuneful 47
Tuxedo 33
Twinkle 47

V

Valencia 35
Valentine 18
Valiant 46
Vedova 34
Venoya 35
Vesper 21
Vesta 20
Vibrant 30
Violet 46
Vogue 31

W

Wagon Wheels 31
W. P. Snyder 37, 49
Waikiki 17
Wedding Bells 24
Whirlwind 9
Wh. Anemone 21
Wh. Bounty 43
Wh. Chief 8
Wh. Cloud 43
Wh. Cushion 43
Wh. Doty 20
Wh. Enchantress 23
Wh. Freida 22
Wh. Frick 10
Whitehouse 21
Wh. Keepsake 20
Wh. Lady 23
Wh. Mary Garden 9
Wh. Masquerade 44

Variety Page

Wh. Mensa 21
Wh. Mistletoe 11
Wh. Norma 22
Wh. Peter John 11
Wh. Pink Chief 8
Wh. Pockett 10
Wh. Popcorn 20
Wh. Princess 23
Wh. Rayonnante 9
Wh. Rice 43
Wh. Riviera 24
Wh. Sail 43
Wh. Snowdrop 24
Wh. Spoon 44
Wh. Taffeta 22
Whitetop 20
Wh. Tower 43
Wh. Valencia 23
Wh. Wonder 43
Wh. Yamane 10
Wh. Yuletide 23
Wilson's White 9
Wilson's Yellow 12
Wisconsin 50
Wychwood 44

Y

Yel. Acclaim 30
Yel. Albatross 12
Yel. Ambassador 12
Yel. Arcadia 26
Yel. Avalanche 45
Yel. Beauregard 27
Yel. Betsy Ross 12
Yel. Blanket 45
Yel. Calumet 45
Yel. Calypso 13
Yel. Cameo 30
Yel. Chattanooga 13
Yel. Chris. Columbus 25, 45
Yel. Cordova 29
Yel. Cushion 44
Yel. Daisy 27
Yel. Delaware 13
Yel. Dot 26
Yel. Doty 27
Yel. Enchantress 30
Yel. Fortune 29
Yel. Galaxy 29
Yel. Garza 30
Yel. Glory 13
Yel. Halo 26
Yel. Highbrow 29
Yel. Iceberg 27
Yel. Igloo 28
Yel. Ill. Snowdrift 28
Yel. Irene 25, 46
Yel. Ivanhoe 12
Yel. Lace 12
Yel. Leighton 13
Yel. L. I. Beauty 29
Yel. Marblehead 12
Yel. Marketeer 13
Yel. Mefo 13
Yel. Moeller 13
Yel. Monument 13
Yel. Nevada 29
Yel. Pacesetter 28
Yel. Paramount 29
Yel. Peter John 13
Yel. Pockett 13
Yel. Queen 13
Yel. Rayonnante 12
Yel. Revelation 30
Yel. Riviera 30
Yel. Rolinda 29
Yel. Sculpture 28
Yel. Sea Gull 27
Yel. Shasta 28
Yel. Shoesmith 13
Yel. Snow 30
Yel. Snowcrest 30
Yel. Spoon 25, 45
Yel. Supreme (H) 44
Yel. Taffeta 29
Yellowtop 27
Yel. Valencia 29
Yel. Waikiki 13
Yolanda 40
Yukon 24
Yuleflame 30

Z

Zylon 16

THIS IS OUR PLANT CATALOG

To borrow a much-used slogan . . .

THROUGH THESE PORTALS PASS "ALL THE BEST—" IN PLANTS FOR FLORISTS!

Our rapidly increasing list of steady customers and suppliers testifies to the fact that we take our responsibilities as your plant jobber seriously. We consider ourselves and our many specialist-suppliers as a team whose sole object is to supply you with the finest quality plants in a complete list of up-to-date, money-making varieties—and at a profit to all three of us!

We're in business to help you make more money. We earnestly welcome your suggestions and criticisms of our service or the plants we supply.

GEO. J. BALL, INC.
Arvilla Kerst, Plant Dept. Mgr.

INDEX

Achyranthes 120
Ageratum 127
Aglaonema 119, 120
Aphelandra Louisa 121
Asparagus 121
Azaleas 127
Begonias 112
Bleeding Heart 127
Boxwood 121
Browallia 127
Cacti 121
Calceolaria 127
Carnations, Variety List.... 98
Culture 102
Cineraria 127
Coleus 121
Croton 121
Cryptanthus Tricolor 121
Cyclamen 127
Dichorisandra Reginae 122
Dieffenbachia 122
Dracaena 119, 122
Dusty Miller 122
Ferns 123
Ficus 123
Foliage Plants 119
Fuchsia 128
Funkia 128
Gardenia 128
Geogenanthus Undata 123
Geraniums 110
Gloxinias 128
Gynura 129
Gypsophila 129
Hydrangeas 111
Ivy 123
Lantana 129
Maranta Kerchoveana 119, 123
Neanthe Bella Palm....124
Nephthytis 119, 124
Pachysandra 129
Pandanus Veitchi 124
Pansy 129
Pelargoniums 110
Peperomia 119, 124
Petunias 129
Pilea Cadierei 119, 126
Philodendron 119, 125
Phlox 129
Phlox Subulata 129
Poinsettias 129
Pothos 119, 126
Primula 130
Roses 113
Saintpaulia 130
Sansevieria 119, 126
Schefflera Actionophylla 126
Snapdragons 130
Verbena 130
Vinca 126

Limitation of Warranty. Geo. J. Ball, Inc., warrants to the extent of the purchase price that seeds, plants, or bulbs sold are as described on the container within recognized tolerances. Seller gives no other or further warranty, express or implied.

Terms: All Plant Dept. orders are billed with a 2% discount for payment 10 days from date of invoice. All invoices are due and payable 30 days after invoice. Make checks or money orders payable to Geo. J. Ball, Inc., West Chicago, Ill.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Carnation Cuttings

IMPROVED OLIVETTE

GENERAL LIST

We offer rooted cuttings of the following varieties. Our propagators are the country's leading Carnation specialists. We offer our cuttings with every confidence that you'll find them as fine or finer than any other cuttings on the market.

An asterisk (*) in front of a variety name indicates a new variety.

Available Nov. 1 thru June

WHITE

	Per 100	Per 1000
Hoosier Spice (Res.) Pure white, good producer. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	**$110.00**
Improved Olivette. Larger and cleaner than Olivette	**$12.00**	**100.00**
Imp. White Sim. A selection of White Sim	**15.00**	**125.00**
Northland. Large, fragrant white	**12.00**	**100.00**
Snowdrift. Snow white, large blooms	**15.00**	**125.00**
White Boston (Res.). Sport of Boston, clean white	**15.00**	**125.00**
White Life (Res.). Creamy white, very productive. Good keeper. Minimum order 250	——	**180.00**
White Littlefield. Pure white sport of Sidney Littlefield	**15.00**	**125.00**
White Sim. Pure white sport of Wm. Sim	**15.00**	**125.00**

PINK SIM

LIGHT PINK

	Per 100	Per 1000
Crowley's Pink Sim. Light pink	$12.00	$100.00
***DUSTY.** Pastel pink sport of Wm. Sim with Sim habits. Minimum order, 250. 250 cuttings, **$50.00**; 500, **$90.00**	——	160.00
Hoosier Desire (Res.). Clear light pink. Very large. 100-225 cuttings, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00
***KATHLEEN ANN.** Pink sport of Sidney Littlefield	15.00	125.00
Light Pink Littlefield. Similar to Hercules Virginia	15.00	125.00
Nancy Thomson. Light pink. Sport of Sidney Littlefield	15.00	125.00
Pink Beauty. Sport of Pink Sim.	15.00	125.00
Pink Sim. Light pink	15.00	125.00
Portrait (Res.) Beautiful new pink. Minimum order 250 cuttings for **$50.00**	——	180.00
***SELECT LIGHT PINK LITTLEFIELD** A new selection this year	15.00	125.00
Virginia Hercules. Large sport of Virginia	15.00	125.00

SALMON PINK

Braun's Sim (Res.). Deep salmon pink sport of Sim. 250-450, **$20.00** per 100; 500-950, **$18.00** per 100	——	160.00
***KEEFERS CHERI SIM.** Bright deep salmon pink; large flowers, few splits. 100-225, **$20.00** per 100; 250-975, **$18.00** per 100	——	160.00
Calypso Sim. Deep shrimp pink sport of Wm. Sim.	15.00	125.00
Debbie. Salmon sport of Sim.	20.00	150.00
Salmon Sim. Salmon pink	15.00	125.00
Salmonaise. Salmon pink sport of Virginia.	20.00	180.00
Shocking Pink Sim. Brilliant dark salmon.	15.00	125.00

MEDIUM PINK

Citation. Rose pink	15.00	130.00
Virginia Rose. Uniform production; good keeper.	12.00	100.00

CARNATIONS, Continued

DARK PINK

	Per 100	Per 1000
Boston. Dark pink. Very productive	$15.00	$125.00
Charlene. Beautiful, large dark pink	15.00	125.00
Fanfare. Dark cherry pink	15.00	125.00
***IMP. SIDNEY LITTLEFIELD.** Virus free, better growth, much better color	15.00	125.00
Saugus Pink. Dark pink	15.00	125.00
Sidney Littlefield. Extra large, dark pink.	15.00	125.00
Virginia Miller. Dark pink Virginia	12.00	100.00

CRIMSON & RED

Cardinal Sim. Color similar to King Cardinal.	15.00	125.00
Congo. New crimson	15.00	125.00
***CRIMSON PRINCE.** Crimson seedling	15.00	125.00
Dark Red Sim. Dark scarlet sport of Sim.	15.00	125.00
Ember Sim. Red sport of Wm. Sim	15.00	125.00
Imp. Red Sim. Larger and fuller bloom than Wm. Sim	15.00	125.00
Jumbo Cardinal. Improved Cardinal. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00
Majestic (Res.). Cross of Wm. Sim. Larger, brighter red	20.00	150.00
Mrs. C. W. Weld. Crimson; clean healthy grower.	15.00	125.00
No. 14 Crimson. Crimson	15.00	125.00
Red #16. Same color as King Cardinal	12.00	100.00
Red Gayety. Clear red. Same growing habits as Gayety	15.00	125.00
Red Sim. Strain of Wm. Sim	15.00	125.00
***SCANIA.** A new selection from Europe.	15.00	125.00
Tom Knipe (Pat.). Large red, full flower. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00
Topper. Rich velvety maroon	15.00	125.00
Wm. Sim (Pat.). Vivid red seedling	15.00	125.00
Wooster Scarlet. Red	12.00	100.00

ORCHID & PURPLE

Exquisite. Purple, orchid edge	15.00	125.00
Hoosier Princess (Res.). Lavender pink that glows pink under artificial light. Flowers are large and full with few splits. Qualified for Dorner Memorial Medal. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00
Lavender Rose. Lavender rose seedling.	15.00	125.00
Orchid Beauty. Novelty	15.00	125.00
Purple Littlefield. Deep purple	15.00	125.00

YELLOW

Braun's Yellow Sim (Res.). Lemon yellow with Sim's vigorous growth. Minimum order, 250 cuttings, **20c** each; 500-950, **18c** each; 1000 or more, **16c** each.		
Brigadoon (Res.). Clear lemon yellow. Parentage, Sim and Miller's Yellow Minimum order 500	——	200.00
Harvest Moon. Buff yellow	15.00	125.00
Hoosier Gold (Res.). Yellow with faint pink stripes. Not a variegated. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00
Imp. Miller's Yellow. Good yellow	15.00	125.00
Yellow Sim. Golden yellow similar to Harvest Moon.	15.00	125.00

Carnation Cuttings

GENERAL LIST, Continued

VARIEGATED	Per 100	Per 1000
Anniversary,. Shade darker than Scarlet Sim	$15.00	$125.00
Cooper's Var. Sim. White with red markings.	15.00	125.00
Frosted Weld. Similar to Scarlet King....	15.00	125.00
Gayety. White with red streaks.....	15.00	125.00
Hollywood Sim. Light pink petals with red overlay	18.00	150.00
Laddie Sim (Res.). Pink sport of Mamie.	20.00	150.00
Lavender Var. Littlefield. Orchid with purple stripe	15.00	125.00
Louisa. Sport of Weld. Raspberry with white edge.	20.00	150.00
Mamie. White with red streaks.....	15.00	125.00
Mohawk. Yellow variegated with pink stripes.	15.00	125.00
Mrs. Christian Herter. Similar to Pelargonium.	15.00	125.00
Peking Pink Littlefield. Dark pink to scarlet with white tip.....	15.00	125.00
Peppermint Sim. Red and white with red penciling.	15.00	125.00
Peppermint Stick Littlefield. Pink variegated.	15.00	125.00
Raspberry Ice. White with pale orchid.	12.00	100.00
S. Arthur Sim. White with red stripes....	15.00	125.00
Sara Jane Knipe (Pat.). Brilliant rosy magenta, silver edges. 100-225, **$15.00** per 100; 250-975, **$13.00** per 100	——	110.00

GAYETY

	Per 100	Per 1000
Scarlet King. Sport of Pelargonium.....	$15.00	$125.00
Scarlet Sim. Sport of Sim. Similar to Scarlet King.	15.00	125.00
Tetra-Sarah Jane (Pat.). Large flowered magenta. Silver edge.	25.00	200.00

Minimum quantity, 100 of a variety unless specified otherwise. 250 or more of a variety at the 1000 rate. Shipped from Mass., Colorado, Ohio, and Indiana.

*New 1957-58 introductions.

YODER BROS. CARNATION CUTTINGS

WHITE

	Price 50 Only
Aurora. Exceptionally large white. Flower size and heavy stem are points of emphasis. Performs best in higher than average Carnation temperatures, and with a narrow range of difference between day and night temperatures. An average to heavy producer...	$6.50
Electra. Large informal white. Petals are deeply serrated. Exhibits the vigor, stretch, and production of White Sim with an improved stem for winter flowering. **Does not split**.....	8.50
IMPROVED OLIVETTE (New). A more vigorous, taller reselection of Olivette.....	7.50
COLO. WHITE SIM (New). Holley's reselection of White Sim. Most important asset is its non-splitting trait. In all periods repeated tests have demonstrated that splitting is very significantly lower than the parent variety. Somewhat fewer petals contribute to this as well as making for straighter winter stems. Vigor and production remain the same	8.50
Imp. White Sim. Large white sport of Wm. Sim. Best under high winter light intensities to improve stem strength	6.50
White Apollo. White sport of Apollo. Unequalled for year round productivity. A marked improvement over Olivette for flower size and stem strength during the winter months. More versatile than Apollo since it is not subject to fading and has an improved summer form.	6.50

LIGHT PINK

	Price 50 Only
Aphrodite. A true light pink. An early producer with an early comeback. Best in high light intensity areas.	$7.50
Pink Sim. Peterson's flesh-pink Sim sport.....	7.50
VIRGINIA HERCULES (New). Well known for its form, color and keeping quality. Air cooling has extended its period of value.....	8.00

SALMON PINK

Ambrosia. A smooth and unvarying salmon pink. A shade lighter than Venus. Unusual stretch and rigid stemmed growth during the winter months. A durable flower for shipping.....	8.50
Apollo. A widely accepted salmon pink. Suitable in many areas of the country. Consistency in providing top quality flowers, coupled with high productivity, continue to lend favor to this variety.....	6.00
Athena. A lustrous salmon-pink slightly deeper than Venus and possessing a greater color clarity than Apollo under low light intensities. A reliable winter producer. Has vigor, stretch, and rigid stems. **Does not split.**	6.50
Salmon Sim. Petersen's light salmon colored Sim sport. Identical in growth characteristics to Pink Sim.....	7.50
Venus. A large, salmon-pink. Flawless color. Like Charm, possesses superb flower qualities coupled with a long, rigid stem. A noted exhibition variety. Performs most satisfactorily at Littlefield temperatures.	7.00

YODER BROS. CARNATION CUTTINGS, Continued

DARK PINK

Hermes. A good dark pink with high temperature color-retention tolerance. Becomes a scarlet pink during the winter months. Ships and keeps well. Rarely splits. $7.50

Mentor. Rich, rose-pink. Strong, rigid stems. Notable keeping and color retention properties throughout the year. 7.50

SCARLET RED

Cardinal Sim. Large scarlet-red sport of William Sim. The most vigorous and productive of the red Sim sports. Less petal serration. **Rarely splits**..... 7.50

Colo. Red Sim. An improved William Sim. Greater vigor and productivity..... 7.50

HILL'S RED SIM (New). Sport of Wm. Sim. Outstanding for its improved vigor, stretch and rapid cropping habit. Flowers are somewhat larger, being similar in form and color to Wm. Sim. The longer stems of good rigidity are especially valuable on the early crops. 8.50

Red Apollo. An interesting dark salmon-red sport of Apollo. More heavily petalled and larger flowered than its parent. Othewise displays the same vigor and general growth habit of Apollo..... 7.50

Siren. A bright scarlet. Combines heavy production with a fast comeback and uniform cropping on stems of medium length..... 7.50

Thor. A vivid scarlet of medium size. Especially recommended for its dependable color retention during high temperature periods. Free and rapid growth. 7.50

CRIMSON RED

Titan. An intense crimson-red. Dependable and continuous growth during the winter months. Recognized for its better than average shipping and keeping qualities among the crimson group..... 7.50

TOPPER (New). Crimson red. Very clear, bright color with medium sized flowers. Fine stretch with wiry, strong stems. Very productive, free growth. Does not split. 7.50

YELLOW

Midas. A dependable yellow. Best winter performance attained under high light intensities. Fast and reproductive. Tolerates closer spacing than Apollo or the Sim varieties. 7.50

Imp. Miller's Yellow. An improved color selection from Miller's Yellow. Formerly known as "Shirley Ann." Color is clear and intense..... 7.50

Harvest Moon. An amber-gold sport of William Sim. Richly colored. 7.50

NOVELTIES, VARIEGATED, ETC.

GARNET SIM (New—Streiferd). Sport of White Sim. Scarlet red background with uniform white pencilling. Production and rapid rate of return for successive crops excells most Sim varieties. The color is remarkable for its stability and intensity. It does not fade in summer. The petal edge pencilling is of sharp contrast, adding a frosted appearance similar to Scarlet Sim with broader areas of scarlet red. This selection is one of the most resistant to splitting yet observed within Sim varieties..... $9.00

Strawberry Sim. Variegated red and pink Sim sport. An over-all narrow red pencilling diffused on a pink background. Background color markedly intensifies going into midwinter conditions. A striking novelty. 7.50

Dark Frosted Sim. Same color pattern as Scarlet Sim but less intense. Two-thirds of each petal from its base is diffused with dark pink pencillings. Petal margin blends to a light pink, providing a frosted appearance. Very stable. Heavier stems than Scarlet Sim. 7.50

S. ARTHUR SIM (New). Sport of Cardinal Sim. Uniform, narrow scarlet red bands on a pure white background. Very stable to color and pattern. Size is larger and stems are stronger than average for Sim varieties. Splitting is no problem. An outstanding variegated Sim..... 7.50

PEPPERMINT SIM (New). Pearson's selection. Pure white background with red pencilling. Uniform and stable throughout the year. Good solid flower with little splitting. Somewhat taller than S. Arthur Sim. 7.50

Gayety. Variegated Sim. Flesh pink background overlaid with bright red pencil pattern. More stable than Cooper's Variegated. 7.50

Cooper's Variegated. Light pink background with medium to large red pencil markings. One of the fastest and most reproductive of the Sim sports..... 7.50

Mamie. Variegated Sim sport. White background overtoned with thin red pencil striping..... 7.50

Scarlet Sim. A tone on tone Sim sport. Color ranges from an intense scarlet at the base of each petal to a frosty white at the petal margins. Color becomes most intense under low temperature winter conditions 7.50

AGATE ATHENA (New). Sport of Athena. Dark salmon bands and pencilling on salmon pink background. Has the same vigor, high production, strong stem and non-splitting character of parent variety. A very refreshing, lively color with good high temperature summer retention..... 9.00

Cassandra. A lively yellow variegated. Pink Pencilling. Rarely splits. Flower has excellent substance and is an outstanding keeper..... 7.50

Nectar. Large orange-yellow variegated with broad scarlet striping. 7.50

PRICES FOR MORE THAN 50 OF A VARIETY ON ONE SHIPMENT

Prices apply to the number of cuttings of any one variety on an order. Effective Jan. 1, 1957.

50 only	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50	$ 9.00
100-250 per 100	11.50	12.50	13.50	14.50	15.50	16.50	17.50
300-450 per 100	11.00	12.00	13.00	14.00	15.00	16.00	17.00
500-950 per 100	10.50	11.50	12.50	13.50	14.50	15.50	16.50
1000-up per 100	10.00	11.00	12.00	13.00	14.00	15.00	16.00

Successful Carnation Culture

The generally very good demand for Carnations across the U. S. the past several years has more than ever confirmed their place as one of our leading cut flowers. The many hundreds of Carnation specialists in the East, the Midwest, Denver, and on the west coast continue to find the crop profitable, by and large are holding or modestly increasing their production. The flower buying public continues to call for them—because they are colorful, fragrant, and long-lasting. Carnations lend themselves to wholesale growing too, because they are excellent shippers.

Carnations are also a "must" crop for the retail growers. The majority of the many thousands of these operators include at least a bench or two per house in their program. They are a natural for this purpose too. Reasons:

1. Cool temperature requirement fits in with many other crops.

2. Production is steady clear through the fall, winter, spring season—flowers always available.

3. Culture is not difficult, especially when the good specialist-produced cuttings are bought—and kept under glass. This eliminates both the propagating task and the hard labor and disease problems that go with field culture.

SOILS AND STERILIZING

Carnations, like Mums, will do well in a variety of different soil types—as long as the soil is properly managed. Most important point here is to insure good aeration. This in turn means adequate organic material or humus in one form or another. The majority of commercial Carnation growers today depend primarily on peat moss to provide this much needed humus. Since the Carnation crop stays in the bench a full year (sometimes 2), a fairly liberal dose of peat before benching will usually be necessary. Amount required depends greatly on condition of soil, amount of humus added previously, etc. In general, 2 to 3 bales of peat per 500 sq. feet of bench would not be unusual.

Many growers still use manure. Well rotted manure in some respects seems to provide an added growth stimulant as compared to peat. The trouble is that manure is expensive, scarce, and unless it is quite well rotted down, is apt to cause trouble. In rotting down, the grower usually ends up with about half the volume he started with. Some growers compromise here by a mixture of peat and manure.

A word about sterilizing. Steaming benches prior to planting Carnations is almost standard practice. Furthermore, all soil used for potting or banding or nursery bed culture is also carefully sterilized. Also, any supporting stakes, labels, or anything else that will come in contact with the soil or the plants. Thoroughness is vitally important, especially in the case of Carnations which are subject to several serious disease problems.

We have a booklet covering all the details on preparation of beds, etc. to do this steaming work—available at no charge on request.

With the few exceptions noted above, all the comments on soil preparation, sterilizing, etc. under Mums (page 51) apply equally to Carnations. Only other difference: certain of the chemical soil fumigants are definitely not recommended for use where Carnations are to be planted. Main offender: Methyl Bromide.

HANDLING OF INDOOR STOCK

Indoor Culture

Probably the most widely practiced method—and in our opinion definitely the most practical solution for the retail grower.

General plan is to order cuttings for delivery between April 1 and about May 1. On arrival, the cuttings are either planted to 2½ inch veneer bands, to a 2¼ or preferably 3 inch pot—or better yet, Jiffy-Pots. In our experience they seem to grow definitely better in the Jiffy. Some growers plant the cuttings to so-called nursery beds—usually 3 x 3 inches. Growth in the nursery beds is good, but there is more disturbance of roots when plants are dug and moved to final bench. A little more chance for disease problems where roots are torn up this way. Clay pots offer several problems—first they must be sterilized; and second, plants tend to dry out rapidly especially in the warmer days of May in clay pots. The veneer bands are quite inexpensive, but in contrast to Jiffy-Pots, there is the added labor of removal of bands at benching time. The Jiffy-Pot can be planted pot and all, which saves time at a busy season.

One critically important point at this stage is that all soil must be thoroughly sterilized before being used. Of course, such things as new veneer bands, Jiffy-Pots, and new flower pots are generally free of disease, but certainly old pots and old flats must be sterilized.

It is also extremely important in planting a nursery bed or potting operation of Carnations in the spring to figure on not over 4 to 5 weeks from potting or banding of cuttings to benching date. Cuttings which are left longer than this will very soon become checked and hardened. At best they will stop growing and worst of all they receive a check which often takes some time for them to overcome after final benching. If the final bench can be cleared immediately after Mother's Day and allowing a week for adding peat, sterilizing, etc., Carnation cuttings should be potted or banded not earlier than April 5 to 10.

The other very important point in handling Carnation plants, especially in the smaller containers, is that regular watering and fertilizing—and spraying—must be followed. Plants tend to dry out rapidly, especially in clay pots. As a result of heavy watering, nutrients are leached out rapidly and must be replaced by frequent feeding. Routine spraying with a fungicide and insecticide is important at this stage of the game. Many troubles such as rust can be easily eliminated here, whereas once established in the final bench with heavier growth they are exceedingly difficult to control.

Incidentally, much better growth will be achieved at this stage if the soil is loosened up by the addition of about ¼ of peat moss before use.

Here are the principal advantages of indoor culture as they have worked out for us.

1. In general, this indoor culture is a little more foolproof and reliable than either direct benching or field culture. Important, especially for the grower who has many other crops to see to and much else to do in the spring.

2. Not necessary to tear out the old crop until mid-May or even early June if desired. Mother's Day and the month of May and even early June can be periods of good demand for flowers both for retail and market growers.

Carnations in Jiffy-Pots — a method that has found increased favor among Carnation specialists. Left photo cuttings just potted, center photo ready to pinch (at pencil point), right photo plant after 6-8 weeks, ready to bench. Cuttings grow rapidly and break well, no disease problem and of course pot and all can be benched, saving labor. The important point: set cuttings just as high as possible in the pot, and when benching pot and all, set the soil ball half an inch or so above the bench level. Helps prevent rot.

3. Indoor culture is much less work than field culture.
4. Much less chance to pick up disease indoors than in the field.
5. The work involved can be done before and after the month of May, which is usually the busiest month of the year.

One objection to indoor culture is, of course, that it ties up the greenhouse space at a crowded season. Actually, young Carnations would be better off in a cold frame as long as they are protected from freezing and if they are watered, fed, and sprayed as carefully as they would be in the greenhouse. They like the cool temperature and will make better plants outdoors than in the greenhouse.

Direct Benching

First proposed in the early 50's, already adopted by a substantial number of growers, it has several very strong advantages—and some shortcomings.

The plan briefly is to plant Carnation cuttings directly to the flowering bench at final spacing just as is done with Mums. Usually the cuttings are planted from around March 1 up till June 1 and some on through the summer. A very few are planted at other months of the year, too.

The saving in labor is very substantial, and one of the major advantages of direct benching. There are no potted or banded plants to care for, and once the plants are benched, they stay there. Another big advantage is that under favorable conditions and if properly done, definitely heavier, more rapid growth and better production can be achieved with direct benching. It stands to reason that a plant which has not been checked and delayed by the extra handling is going to produce that much more growth—and sooner. Also, if properly carried out, there is less chance for disease with direct benching. The grower eliminates the possibility of infection from flats, pots, etc. used in carrying the plants along. An additional advantage is the possibility of cropping certain colors that are wanted at certain seasons—for example, red for Christmas. As a matter of fact it is possible to even control production of flowers—heavier during periods when flowers are wanted, etc. However, since most crops will produce two production peaks, if usually becomes difficult to take advantage of both of them.

Now for the disadvantages. Probably the toughest one, taking the average experience of a large number of growers, is the difficulty of getting cuttings established and into growth, rapidly, especially during hot weather. For some reason, a Carnation cutting direct planted in hot weather sometimes more or less just stands there for many weeks before it gets growing. Sometimes many of the plants are even lost. We have seen this happen in some cases to very good growers. It is almost always associated with summer heat; but direct benching cuttings back in March and April means throwing out a flowering bench before the crop is through.

The second disadvantage is tendency of direct planted crops to produce heavy production peaks (2 of them the first year)—and not always at the time they are wanted. For a more complete discussion of this problem, see GROWER TALKS, March 1955. Even with the so-called pinch and a half there is a greater tendency for the crop to flower unevenly than is the case with banded or potted plants or field plants.

In addition to this, the bench is tied up on extra 5 to 6 weeks longer at a time when space is at a premium. Conversely, the old crop must be thrown out in midspring just when flowers are wanted.

Certainly, where direct planting is planned, it is vitally important that the several suggestions on direct planting as outlined on page 53 of the Mum cultural section be followed carefully. Steam sterilizing is almost a must, and certainly a good succulent, well-rooted cutting is a definite requirement where direct planting is to work. No doubt it is a little less forgiving and foolproof than nursery bed or potting—but potentially more rewarding if done successfully.

Direct planting is used most heavily by Carnation specialists, and most of them use it in combination with various schemes of nursery bedding or of Jiffy-Potting to fill in the production gaps and to enable them to leave part of their old crop to flower through May and June. Also, direct planting seems to be used more in the cooler section of the country. Where used in the South, the cuttings are usually planted as early as February or March.

Probably the most commonly used and practical of the direct benching schedules is something like the following:

June 11—Direct bench cuttings (Sims varieties)

July 2 —Start the first pinch (high pinch, each plant as side shoots show)

Aug. 8 —Start second pinch, the most advanced shoot on each plant until two are pinched on each plant.

Oct. 15— Start steady substantial cut of Sims varieties (around 1 flower per sq. ft. per week). Reasonably steady production is continued thru the winter and spring.

SUCCESSFUL CARNATION CULTURE

Note: Above schedule is a typical "pinch and a half" crop. In other words, each crop is pinched once 3 or 4 weeks after planting, then about half the shoots are given a second pinch—to more evenly distribute the crop of flowers.

Direct benching after Mother's Day will, of course, bring the crop into flower proportionally earlier.

Where the loss of production in May and early June is the problem, there is a schedule worked out by Dr. John Seeley at Penn. State which, with Sims varieties, will help. It follows:

June 15—Direct plant cuttings 7 x 7.

July 15—Most cuttings should have side shoots cleared and be ready for a soft pinch. No second pinch on any plant.

Nov. 1 to January 15 first crop—4 flowers per sq. foot for December alone reported by one grower.

April 5 to June 15 second peak for crop from the above plants—just about right to fill in the May-June gap resulting from other benches being torn out.

Field Culture

Cuttings are banded (March-April), carried indoors till hard frost danger is past, then planted out to the field. In mid-July they are dug, brought in, and benched. The cooler temperatures outdoors produce heavier bushier plants, so much so that considerably fewer of them are needed to fill a bench than of the indoor grown plants. Field grown plants tend to be light in production during late fall and early winter, but are in very heavy cut from late winter on. Main disadvantages are first the danger of picking up diseases outdoors, and second the large amount of hand labor involved. Because of the increasingly serious disease problem and the help shortage, more and more growers are keeping plants under glass till benching time; although many thousands are still handled outdoors. Highlights of field culture:

Soon as cuttings are rooted, they should be planted into 2½-inch bands set in wooden flats. The flats may be moved about easily—and may be put on shelves if necessary. Also, the flats may be prepared, filled with bands and soil in advance. Soil for banding or potting should be lightened with peat or well rotted cattle manure, and should be steamed a month or two before used. (Be sure flats are steamed, too). We also add phosphate, roughly equivalent to 5 pounds per 100 sq. feet of bench area. Care should be taken to set cuttings just as shallow in the bands as possible—even if a root is exposed here and there. Deep planting is inviting rot—and also a slow start. Carnations in bands should be kept at regular Carnation temperature—50° nights, 58° cloudy days, 62-65° sunny days. Feed lightly after they are growing; we prefer a balanced liquid feed. Even though they may wilt a little, they will be better with no shade at all after transplanting.

Where soils are apt to be heavy, it is advisable to spread a ½ to 1-inch layer of sand or some coarse material over the flat bottom before putting in the bands and soil—to insure against waterlogging of soil in the bands. This can be serious, especially in winter!

Some 4 to 5 weeks after banding, the plant should be ready for its first pinch. It should have made several inches of good new growth, and side shoots should be evident about the base of the plant before pinching. We pinch soft (high). A lower pinch seems to shock the plant and make it come back slowly. The cutting should be so brittle when pinched that the tip may be simply broken out. Buds shouldn't show in the plant tip at this time—if so the plant has been hardened or checked somewhere.

One more point on the "in bands" period: the plant must never be left in the band so long as to be checked. Cuttings made back in December and held in bands till mid-May are bound to be hardened. Actually, only the later winter propagation can be held over for field planting, and some of that should really go to 3 x 3 bands. A Carnation, like any other plant, if hardened, will never produce the crop of which it is really capable. We never try to hold a Mum in a 2½ inch band over 4 to 6 weeks, and a Carnation shouldn't be there much longer.

Soon as danger of frost is past, the plants, band and all, are set out to the field. The land used should not have been used for Carnations for at least several years, preferably more. They are set in rows 20 inches apart (wide enough for rototiller cultivation), and 6 inches apart in the row. They may be set in "beds" outdoors, spaced 8 x 8 inches, with 4 foot beds and 2 foot walks. Ohio State recommends sideboards and steaming the soil in these beds to help control diseases.

In planting outdoors again be most careful to set plants as shallow as possible, and also to avoid breakage of branches or roots.

Plants should be sprayed every two weeks with the Fermate-Parathion spray described on page 59. After they are in active growth, give them a top dressing of 4-12-4 applied in ribbons on either side of the rows. Cultivation is helpful, but care should be taken to avoid breaking plants up. Water? Yes, if it's dry and they need it—overhead sprinklers are usually used. If you do water, soak thoroughly.

Pinching should be a continuous process from the time of the first pinch till late July. Plants are gone over every week, pinching one or two shoots from each plant that is ready for it. They will break out better if this is done early in the morning. By the way, these broken out "tips" if rooted, make poor, weak-growing plants. Pinching should stop not later than late July or the crop will be delayed. Free breaking, fast producers can be pinched a bit later. A plant should have at least half a dozen breaks on it at benching time (field plants).

Starting in early July, and winding up by July 15, the plants are moved to their final benches in the greenhouse. Again, use care in digging and moving plants to avoid breakage. In our experience, the veneer bands are pretty well rotted by this time; they seem to hold together enough so that the original ball of soil still holds together as plants are dug.

INSECTS AND DISEASES

Recommended control measures for most of the important Carnation insects and disease problems will be found between the chart "Know Carnation Diseases" on page 105, and the table on recommended control for insects and diseases on page 62.

Much of this battle with Carnation diseases—and insects too—can be won by a well planned and carefully followed preventative program. This is particularly true of the perennial problem of Carnation plants rotting off a month or two after benching. Actually there isn't too much that can be done to stop this very serious problem once it appears. However, there are several important preventative measures that should be taken:

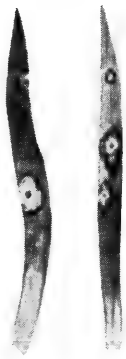
1. Very carefully sterilize all soils, flats, old flower pots. etc. used in connection with the crop. Be sure to include the supporting stakes, labels, etc. Also tools.
2. Use as nearly as possible disease-free cuttings. In general, cuttings from specialist propagators will be free

Turn to page 106

KNOW CARNATION DISEASES

They Cost You Money

BACTERIAL LEAF SPOT
Edge of spots watersoaked and yellow, when held against light. Bacteria may ooze from surface as droplets. Disease progresses from lower leaves upward. Infection also on stems and flowers. **Favored by moist conditions.**



SEPTORIA LEAF SPOT
Most common on lower leaves and stems. Note small black specks of fungus in center of spots. Spreads easily by spores. **Favored by moist conditions.**

MOSAIC STREAK
MOSAIC—Mottling most evident in young leaves. Flowers may show light streaks paralleling veins. Virus spreads easily by handling and by aphids. **Wash hands before handling healthy plants.**
STREAK—Virus disease spread only by insects and cuttings. No effect on flower. Red spots more pronounced on colored varieties. **Should be rogued. Control insects.**

ALTERNARIA LEAF SPOT
Lower leaves most commonly affected. Stem may be girdled by fungus. Spreads by spores. **Favored by moist conditions.**

RUST
Entrie plants may be injured by severe infection. Stems may be affected. Spreads by spores. **Favored by moist conditions.**

HEALTHY BLOSSOM

BACTERIAL WILT
Wilt rapid. Root head watersoaked, the roots sloughing off. Rot moist. Sticky beneath bark. Yellow to tan streaking within stem. Easily spread by tools. **Favored by warm temperatures and improper sanitation measures.**

FUSARIUM ROOT ROT
Wilt slow. Root head not watersoaked. Roots sloughing off. Rot dry. No stickiness beneath bark. Red-brown color in rot only. **Favored by improper sanitation measures.**

VIRUS YELLOWS
Results from combined mosaic and streak infection. **Infected plants should be rogued.**

FUSARIUM WILT
Wilt slow, generally on one side. Roots intact. Rot dry. Root head not watersoaked. Brown streaking within stems. No stickiness evident. Stems often cracking. **Favored by improper sanitation measures.**

Prepared by Colorado Agricultural Experiment Station in Cooperation with Colorado State Flower Growers Association

of disease—not 100% so always, but enough so that the average grower who uses them and carefully sterilizes soil, etc. will have little or no trouble from loss of plants after benching.

3. Careful watering practices, especially the first months after benching. Overwatering, and also failure to get ventilation in the houses in the morning will create high humidity which definitely favors most of these diseases.
4. Terraclor treatment of soil just prior to benching plants. This is a new development that shows promise but hasn't been tried on a large number of commercial ranges as yet. It's simple and inexpensive and looks like one of those things that couldn't help but do some good. More details in Grower Talks, June, 1956, page 27.

In the field of insect control, there is again a strong case for a preventative program. Actually the type of spray program described on page 59 under Chrysanthemum Culture has equal application here.

ON GOOD GROWING PRACTICES

Feeding and Watering

How often to water? It certainly can't be done on a schedule. They will go 5 times as long between waterings in the winter as they do in the summer. It pays to take a trowel and dig a handful of the lower soil before watering. Many growers wad a handful of the lower soil into a little ball as a test. If the ball crumbles, again the bench is ready for water. In general soak thoroughly when you do water.

Mostly though, watering is a case of common sense and experience. Obviously a bench of Carnations should never be allowed to become wilting dry. Probably the other most general problem is one of overwatering in winter. As a general rule it is a good thing to allow the soil to become dry enough so that it will make a ball that will crumble—as described above. Be sure to check the center of the bench, not the edges. Most growers will touch the edges of their Carnation benches several times in winter between regular heavy waterings.

About feeding: There seems to be some widely differing opinions on whether Carnations should be fed to maintain a level of 40 or 50 parts of nitrogen through the winter in the North. Many excellent growers do little or no feeding all winter—just barely enough to keep nitrogen showing on a soil test and to keep the plants from actually yellowing from lack of nitrogen and potash.

It would seem a fair general statement that 30-40 parts of nitrogen and potash should be maintained through the spring, summer, and fall, and that at least enough nitrogen and potash be applied in the winter to keep a low test showing, and to keep the plants in good color. Certainly this will mean several times as much feeding in the summer as in the winter. Incidentally, many growers prefer to do their Carnation feeding with liquid fertilizer injected into their watering system. Works very well. Saves a lot of work.

Carnations are known to need calcium especially. Normally 150 ppm should be maintained. Add gypsum if calcium is needed. Phosphorous is usually supplied by annual addition of 3 lbs. per 100 sq. ft. (40%).

Temperature

The standard Carnation house temperature has always been 48-50° nights, 56-58° cloudy days, and 62-65° sunny days. Some very good growers don't go higher than 52 or 55° on cloudy days and 60° on clear days. That makes sense, particularly during long spells of cloudy weather. Somewhat lower temperatures in periods of dark weather will offset some of the soft stem tendency.

Carnation cutting production at Yoder Bros., Barberton, Ohio. These many bench areas of perfectly uniform, clean, vigorous mother blocks are one of the reasons more growers each. year convert to specialist propagated cuttings. Another reason: the constant selection of strains of all major varieties toward larger flowers, better quality. In the photo: Cloy Miller of Yoder Brothers.

Many growers who use only the Sims varieties will go down to 46° nights clear thru the winter—to ease the problem of weak stems. Of course, the lower the night temperature, the less production you get. The Littlefield varities are generally grown at least 50° nights, and many growers carry them 52 or 54° at night—again to improve production. Somehow they seem to stand the higher temperatures better than most varieties.

Ventilation

Very important especially in the control of Carnation diseases.

The crux of the whole problem is to operate the heating and ventilating system in such a way as to prevent the humidity from becoming very high in the greenhouse. Saturated humidity means moisture on the foliage. That provides an ideal situation for disease spores to germinate and spread. To prevent this during murky, cloudy, damp days in winter when the temperature is in the 30's or low 40's, it is very helpful to keep a little heat in the houses and keep a crack of air on at the same time. This has an effect of drying the air in the house.

Another important point—in the afternoon during the winter on a day when some air has been carried, it is important to be sure to have heat in the house before the ventilators are shut tight.

Shade on the Glass?

As with Mums or any other crop, shade on the glass even during hot weather can only reduce the amount of growth and production that the plants can make. However, under cases of extreme heat and especially where young plants are just starting, it is almost necessary to do a little shading. Better keep it light. A good check is to use a light meter and be sure that at least 5000 foot candles of light will penetrate the roof on a sunny summer afternoon. Most growers will remove all shade later in the summer as the plants become well established. This means quite frequent watering, but does promote better growth.

Spacing

Seven by seven is probably the most generally used spacing by commercial growers—where plants are benched from nursery beds, Jiffy-Pots, or plant bands. The same spacing is generally used for direct planting. Where field culture is practiced and large heavy clumps are brought in midsummer, many growers go to 7 x 8 or even a little further.

Supporting

It is of obvious importance that supporting be tended to promptly. Usually Carnations will need at least 3 sets of wire and cross string supports before the end of the season.

CUT THE FIRST CROP HIGH!

One of the important points in managing a crop of Carnations is to avoid cutting the first crop of flowers in the fall down hard. Obviously if the first crop is cut clear down to the base of the plant, there will be no place for breaks to come from to provide the all-important winter and spring production. This is the reason that most growers will turn up on the fall market with stems as short as 12 to 15 inches.

Professor W. D. Holley and Jorge Caparas at Colorado State University ran some interesting trials on the results of cutting back Carnations at 3 different heights. Briefly the conclusion was that where the fall crop was cut high the production from January thru April was much higher than where the fall crop was cut low. Interestingly enough, the best **quality** on the winter-spring crop was obtained where the fall crop was cut down fairly low. This quality difference was most noticeable in the fall and tended to disappear toward winter and spring.

Note the accompanying graph showing the production resulting from high, medium, and low cutting of the fall crop of flowers—on the trials at Colorado. Note particularly the substantially heavier production of flowers from early January till late April where the first flowers in the fall were cut high.

Incidentally, a high cut on the fall crop was defined here as cutting the flowers with a stem length from 14 to 18 inches. A medium cut meant cutting the flowers from 17 to 22 inches. Cutting a long stem in fall was defined as taking a flower with 22 to 26 inches of stem length.

GROWING CARNATIONS TWO YEARS

For years, some growers have practiced more or less of second year culture on their Carnations. It is still seen occasionally but could not be called a general practice at this time.

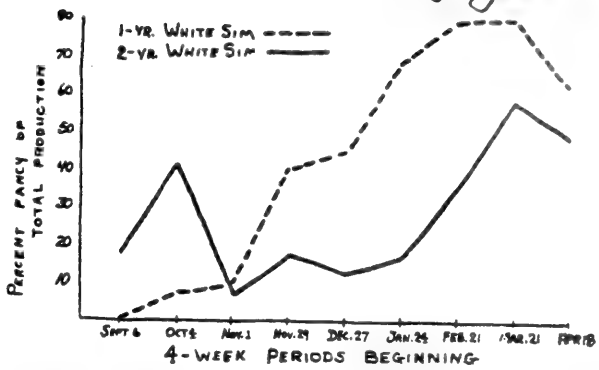
The big advantage, of course, is the saving in both labor of tearing out the crop, sterilizing and replanting, and also the cost of plants. This is substantial, and especially in a situation where help is scarce, the labor factor can become all-important.

In Europe where summers are cool, second year culture is practiced quite generally. Perhaps with the advent of cooling in our greenhouses in this country, we may be able to overcome the disadvantage of it and perhaps it will again become more general.

The principal disadvantage of second year culture are, first, a decrease in quality on the second year crop, and second, some additional problem in timing of the crop where certain practices of cutting back are followed.

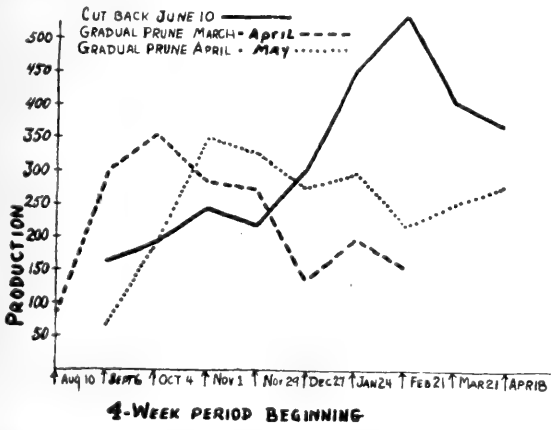
Again based on studies at Colorado State by Prof. W. D. Holley, it is apparent that the most important thing is to avoid cutting plants back all at one time. This not only gives a plant a severe check, but will result in a heavy follow-up crop during a limited period of time the following winter. A plan of gradual thinning and cutting back of the plants will distribute the second year production much better, and will result in improved quality, too.

According to tests run at Colorado, if the pruning is done during April and May, the following second year crop will occur later—steady and heavy in the winter and spring and lighter in the fall—than if the pruning is done in March and April. The graph shown at left illustrates this point very clearly.



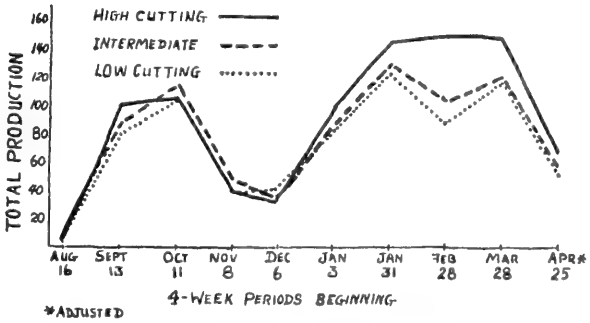
Percentage of fancy grade Carnations from one and two year White Sim plants. Clearly the first year plants produced more top quality blooms. The difference is most apparent between December and April. From Colorado Flower Growers Bulletin #65, W. D. Holley.

Distribution of 2nd Year Production—Carnations



The question: should benches being prepared for second year production be pruned back early (March), or late (June). The gradual April-May pruning (thin dotted line) flowers less in the fall when flowers are not wanted and heavier in the winter when they are. The June 10 cut back (solid line) comes in very heavy December-February but very weak in late fall. Above graph also by Prof. W. D. Holley, Colorado Growers Bulletin #65.

The distribution of return crops from three heights of cutting carnations



What happens if the fall crop of Carnations is cut down hard? Above chart by Prof. W. D. Holley, Colorado State University, puts the finger on the loss of production, especially during the all-important January-April period resulting from cutting the fall crop too low. The solid line above is the production curve from the plants which were cut high in the fall. See text. From Colorado Flower Growers Bulletin #59.

The difference in quality between first and second year production on White Sim is also clearly shown on the graph on the preceding page.

EFFECT OF SUMMER COOLING ON CARNATIONS

Sufficient area of Carnations was grown under cooling the past summer over more or less of the country to draw at least tentative conclusions on the effect of cooling of the crop. It's a little hard to generalize because the effect of cooling varied somewhat between the very dry areas—such as Colorado—and the Midwest. Let's talk about the dry areas such as Colorado first:

Nearly all of the Denver area Carnation crop is now under pad and fan cooling. Beyond question this has enabled the Denver growers to produce a good quality flower right through the summer months—as compared to the small faded blooms formerly produced during the summer. Furthermore it has given remarkably better vigor to the newly benched plants. Beyond any question, cooling of some sort is a permanent part of the Denver Carnation picture.

There have been problems too. The biggest one seems to be that as a result of the much more vigorous growth on the new plant during the summer (under cooling), the plant entered the fall with substantially more breaks per plant than was the case before cooling. This means more production which is fine, except that in many cases the plant simply had more breaks as it entered the dark winter period than it was capable of maturing. Result was notably higher production than before cooling but, due to the crowding, the percent of smaller grade flowers went up substantially in the winter. As a result growers out there are thinking considerably in terms of limiting the number of shoots per square foot that will be left on the plant as the crop enters the winter.

Also there will be adjustment in planting schedules—most notably under direct planting. At the February Colorado Flower Growers meeting, Bob Holley suggested that the Sims varieties direct planted June 15, single pinched, should be in flower between November 18 and December 22 (about right for Christmas). This assumes benching a husky cutting. An alternative plan for "pinch and a half" which will spread production out more evenly: Direct bench cutting June 1 to June 15, pinch in two weeks. Four to five weeks later go through and pinch two more shoots per plant. The breaks that are pinched the second time will not make Christmas but the unpinched breaks will.

Two other results of cooling: For one thing, second and even third year culture of Carnations looks a lot more promising as a result of cooling. Without the terribly hot weather of midsummer to drive the life out of the plant, it is possible to produce surprisingly good quality on second year plants. Bob Holley suggests May 15 as a good date for cutting back the second year benches with cooling. These plants should be back for Christmas. The other point: Direct planting itself looks a lot better with the addition of greenhouse cooling. The biggest problem up to now has been the tendency of plants to die out when cuttings are planted directly in open benches in a boiling hot midsummer greenhouse.

Other Areas

It's a little harder to comment on effective cooling over the rest of the United States—mainly because of the endless variation in humidity—and summer heat.

Midwest (and East). Taking the Midwest as a typical area where a quantity of Carnations are grown and where humidity is higher than in Denver, we would appraise cooling about as follows: Not as decisive an improvement in summer quality of cut flowers as is the case of Denver. However in our experience here last summer, flowers were much larger than without cooling, and colors, particularly the pinks and yellows, were very noticeably better with cooling. The question: Would it pay a Carnation specialist in the Midwest or the East, for example, to cool his crop? We would say yes. As any Midwestern grower knows, summer Carnation flowers without cooling are scarcely marketable. During summers when the heat is not too severe, with cooling a grower can maintain good quality, especially through June and most of July (best Market). Also there is a very definite improvement in the take-off and growth of new plants under cooling.

Here's John Mohlenhoff who, with the rest of the family operates Mohlenhoff's Greenhouses, Huntington, L. I., N. Y. John is a retailer-grower, heavy in Carnations, Mums. When you see how closely space is used here, you realize why John makes the point of not wanting to sacrifice space to produce cuttings. Every foot must pay its way!

South. Cooling may mean more to southern growers than to any others; it's often the difference between profit and loss. Good Carnations can be cut for five or six months in southern states, but without cooling the rest of the year is hopeless, and growers have not been able to make out. Cooling, according to several who have tried it below the Mason-Dixon line, allows very good quality material to be produced the year around. This, combined with high winter light, has brought production up around 50 blooms per sq. ft. in some cases. Direct benching of rooted cuttings and fast summer growth of new plants hold in the South, too.

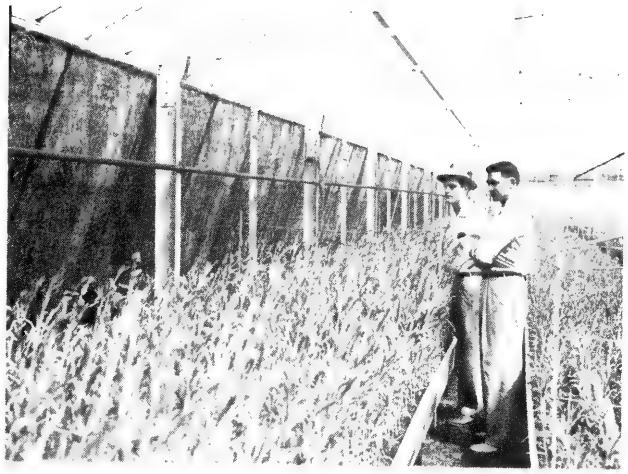
PROPAGATION VS. SPECIALISTS' CUTTINGS?

During the past 5 or 10 years it has become almost standard practice to use cuttings from specialist propagators. Reasons for this in the Mum industry are worth noting:

1. Freedom from disease—again not 100%, but in general the specialist propagator's stock is free of the difficult diseases that can make so much trouble with both Mums and Carnations.
2. Simplification of the growing operations. With more precise schedules becoming the practice in Carnation growing it is necessary to have the well rooted cuttings, the right varieties, and the right proportions of colors available on the right date to meet plant cropping schedules. It is extremely difficult for an individual grower to have enough stock area to produce the desired quantity and varieties of cuttings for the exact dates wanted. This problem has been a major reason for Mum growers' switching over to specialist propagator's cuttings.
3. Economy. This is a hard point to realize when bills for cuttings must be paid, but it is even harder for most

growers to realize the actual dollars and cents cost that goes into maintaining stock beds, insect disease control on them, the labor of making and rooting cuttings, etc. These tend to be hidden costs and therefore not generally appreciated. The realistic way to look at this question is—how much dollar revenue can be gained by putting the same area and the same amount of labor that is now in Carnation stock into some other revenue-producing crop?

There has been a definite trend the past several years toward more and more growers' availing themselves of the high quality, reliable cuttings produced by Carnation propagators. We believe this trend will be accelerated in the several years ahead of us. To some extent this is only an extension of the long range trend in our industry toward specialization—each fellow doing the part of the job that he can do best. After all, if a man **specializes** in one small part of the job, devotes all his energies, abilities, and management talent to doing that part of the job well, it stands to reason that he is on the long haul going to do it better and at lower cost than the fellow who tries to do a little of a lot of things.



Pad-Fan cooling on Carnations in Colorado. Above, photo at Cherry Creek Greenhouses. Inc. Bill Leonard of Cherry Creek, right, Darrell Messick, Geo. J. Ball representative, left. The Leonards report as much as 25 degrees of lowering of temperatures and great improvement in the crop.

TO PREVENT ROTTING OF CARNATIONS AFTER BENCHING

Loss of young Carnation plants after benching is more or less of a problem wherever Carnations are grown. Often it is difficult under commercial conditions to identify the specific disease involved (there are many) —and apply the specific control measures. However, there are certain general control measures which, if followed closely, will in most cases greatly minimize or completely eliminate this perplexing loss. Here they are:

1. Thoroughly steam all soil, flats, labels, supporting stakes—anything that will come in contact with the soil or the plants. Soil can't be considered steamed unless it has been carefully checked (at the coolest points) with a thermometer. The rule: 180° for 30 minutes. Be sure to add all peat, manures, humus, etc. **before** steaming.

2. Make every effort to obtain disease free cuttings. Much disease trouble comes into the bench with the cutting. The larger specialist propagators who furnish the cuttings we offer conduct a constant program of culturing mother blocks, etc. to insure the greatest possible freedom from disease.

3. Where loss of plants has been a problem, we recommend potting cuttings to Jiffy-Pots or veneer bands rather than direct benching—or even planting to nursery beds. For whatever reasons, there is much less loss of plants, especially in Jiffies or sterile pots. Perhaps part of this is due to rapid drainage. Diseases are less apt to spread among plants in Jiffies or pots.

4. Very important: in setting cuttings into Jiffies or bands, be sure they are planted shallow—just as high in the soil as possible, even if a root or two shows. It is equally important in final benching of the plant to set the Jiffy-Pot or soil ball half an inch or so higher than the surrounding soil.

5. Ventilating and watering practices must be watched closely to keep stem and foliage dry as possible at all times. Avoid splashing water up onto the plants in watering—and also keep water from running across the bench. Water early in the day—with vents open. Misting of cuttings after planting can make trouble—better plant them earlier—before mid-May—so this is not necessary.

6. Soils used should be in the medium levels of principal nutrients—and in the medium low level of soluble salts. Calcium should be held at 150 ppm. A very hard soil should be loosened up with some peat—a bale or more to a bed.

7. Fungicides can help too. A foliage spray every week or two during early stages with Captan or Parzate is beneficial. Terraclor applied to the soil dry after sterilizing and just before benching and raked in like a fertilizer is definite help against rhizoctonia and sclerotium.

8. Don't plant cuttings into bone dry soil—it should be medium moist.

9. Try to avoid hot weather problems by getting cuttings in and potted during the cooler months of early spring—by early May or before.

Geo. J. Ball INC.

Ball Geraniums

Certainly one of our leading pot plant and outdoor bedding plants. As you will see below, we offer a complete line of cuttings from California propagators as well as 2¼ inch plants from eastern specialists. We highly recommend our Geranium cuttings and 2¼'s as being the finest available—regardless of price.

CUTTINGS

All our cuttings come from California specialists and are available throughout the year. We have bought from these propagators for several years and are confident that no cleaner or higher quality cuttings are available. When ordering, be sure to specify whether you want ROOTED or UNROOTED cuttings.

Appleblossom
Avalon Red
Better Times
California Beauty
Enchantress Fiat
Gregerson's White
Imp. Red Fiat
Imp. Ricard
Irene
Irvington Beauty
Madonna
Mme. Buchner
Mme. Landry
Olympic Red
Orange Ricard
Penny
Picardy
Pink Better Times (Edna)
Pink Fiat
Pride of Camden
Radio Red
Red Barney
Red Fiat
Red Landry
Salmon Supreme
Snowball
Ivy Leaf Assortment

Prices on all above varieties:

Unrooted cuttings....**$4.25** per 100; **$37.50** per 1000.
Rooted cuttings.....**$8.00** per 100; **$75.00** per 1000.

Fancy Leaved Assortment.

Unrooted cuttings....**$4.50** per 100; **$42.50** per 1000.
Rooted cuttings.....**$9.00** per 100; **$85.00** per 1000.

The following two varieties are available in **ROOTED CUTTINGS ONLY.** Available in limited quantities beginning in November.

Salmon Irene **Dark Red Irene**

Price on above two varieties **IN ROOTED CUTTINGS** only, **$9.00** per 100; **$85.00** per 1000.

Orders for Rooted cuttings are rooted to order only—allow 6 weeks for delivery. **Be sure to specify on your order whether you want ROOTED or UNROOTED cuttings.**

MINIMUM ORDER, 1500 CUTTINGS, 100 of a variety. 250 or more cuttings of any variety billed at the 1000 price. Because of the highly perishable nature of Geranium cuttings, we ship by AIR FREIGHT ONLY. 3000 cuttings can be shipped at minimum air freight rates. All cuttings shipped f.o.b. California. Be sure to specify on your order the airport to which cuttings are to be sent and your telephone number where air freight companies can call you upon arrival of the shipment.

NEW GERANIUM, **PINK CLOUD**

Developed at Iowa State College by Prof. E. C. Volz, PINK CLOUD was introduced by us last year on a limited basis. Its claim to heat-resistance and free flowering under adverse summer conditions has been amply proven by trials throughout the country year before last and by our customers last year. An exceptionally large flowered pleasing light pink. Similar but superior to Enchantress Fiat because of its vigorous, free flowering growth during the heat of midsummer. We pay the Society of Iowa Florists' Research Fund 3c per plant royalty on each plant sold.

Available in 2¼ inch plants only. Priced at **$230.00** per 1000; or **$23.00** per 100. Shipped f.o.b. Wisconsin. Minimum order, 100 plants.

2¼ INCH PLANTS

The following varieties are grown for us by specialists. Available July through May.

NEW VARIETIES

Dark Red Irene **Salmon Irene** **Springtime** (light salmon) **2¼ inch plants** of the above three varieties priced at: **$20.00** per 100; **$190.00** per 1000.

Better Times
Enchantress Fiat
Genie (rose pink)
Imp. Ricard
Irene
Madonna
Mme. Buchner
Mme. Landry
Olympic Red
Penny (neon pink)
Pink Fiat
Radio Red
Red Barney
Red Landry
Red Fiat
Salmon Supreme
Snowball
Springfield White
White Selection (more double sport of Madonna)

Prices on above varieties: **$17.00** per 100; **$160.00** per 1000. Minimum order, 100 plants. Shipped f.o.b. Illinois, Indiana, Connecticut, Colorado, Michigan, New York, ,Ohio, Pennsylvania and Wisconsin where available. Your order will be shipped from nearest available source.

PELARGONIUMS

We offer rooted cuttings and 2¼ inch plants f.o.b. Indiana from specialist growers. If you are interested, write for our complete variety list and prices.

Hydrangeas

Dormant Hydrangeas should be ordered for delivery in late December for Easter flowering. For flowering between Easter and Decoration Day, allow 3 months of forcing. In general the following varieties are better for early or Easter forcing: Sanctis, Zurich, Charm, Europa, Hamburg, and Regula. The following are best for midseason forcing: Alpengluhn, Monte Forte Pearl, Sainte Therese, Todi, Red Star, Rose Supreme, Engel's White, Kuhnert and Strafford. The following are best for late forcing: Merveille, Dundalk, and Rosabelle.

There is a considerable difference of opinion among growers as to varieties best suited to pink and blue forcing. In general however, the following varieties tend to produce good blue flowers easily: Alpengluhn, Dundalk, Rose Supreme, Kuhnert, Merveille, Rosabelle, Red Star, and Europa. The following tend to produce clear pink flowers easily: Strafford, Europa, Kuhnert, Altoona, and Rosabelle.

SHIPPED F.O.B. MARYLAND

RECENT INTRODUCTIONS:

Flamboyant. Medium pink. Limited supply.
Alpengluhn. Midseason light red.
Monte Forte Pearl. Carmine red.
Sainte Therese. Excellent white.
Sanctis. Medium red.
Todi. Midseason dark pink.
Zurich. Light red.
Prices above 7, each:

Rooted Cuttings (spring delivery): **$30.00** per 100; **3 inch** (1 shoot per plant), **$50.00** per 100.

Dormant plants (fall and winter delivery) of above varieties priced as follows per 100 plants:

3 inch (1 shoot), **$50.00**
4 inch (2 or more shoots), **$ 80.00**
5 inch (3 or more shoots), **$100.00**
6 inch (4 or more shoots), **$150.00**
7 inch (7 or more shoots), **$250.00**

Charm. Carmine red.
Dundalk. Medium red.
Red Star. Brilliant red.
Rose Supreme. Rose pink.
Prices above 4, each:

Rooted cuttings (spring delivery), **$20.00** per 100.
3 inch (1 shoot per plant), **$40.00** per 100.

Dormant plants (fall and winter delivery) of above varieties priced as follows per 100 plants:

3 inch (1 shoot), **$ 40.00**
4 inch (2 or more shoots), **$ 70.00**
5 inch (3 or more shoots), **$ 90.00**
6 inch (4 or more shoots), **$125.00**
7 inch (7 or more shoots), **$200.00**

STANDARD VARIETIES:

Engel's White. Strong grower.
Europa. Salmon pink.
Hamburg. Carmine.
Kuhnert. Rose pink.
Merveille. Light red.
Regula. White.
Rosabelle. Rose pink.
Strafford. Dark pink.

Prices above 8, each:
Rooted cuttings (spring delivery), **$16.00** per 100;
3 inch plants (1 shoot per plant), **$30.00** per 100.

Dormant plants (fall and winter delivery) of above varieties priced as follows per 100 plants:

3 inch (1 shoot), **$30.00**
4 inch (2 or more shoots), **$ 60.00**
5 inch (3 or more shoots), **$ 80.00**
6 inch (4 or more shoots), **$100.00**
7 inch (7 or more shoots), **$150.00**

All above plants sold in units of 25 per variety.

SHIPPED F.O.B. OHIO

We offer excellent quality dormant plants of the following five varieties for shipment during the winter season:

	Hamburg Kuhnert Each	Merveille Strafford Regula Each
One cane, 4 in.	$0.40	$0.45
Two cane, 5 in.	.55	.65
Three cane, 5 in.	.70	.80
Four cane, 5 in.	.85	.95
Five cane, 5 in.	1.00	1.10

Quantity Discount. For orders of 250 or more in each cane size and each variety, a quantity discount of 2½c per plant is allowed.

SHIPPED F.O.B. OREGON

We offer 5 inch sized, **dormant plants** of the following varieties for shipment in midwinter:

Altoona **Charm** **Engel's White** **Europa**
Hamburg ***Kuhnert** **Merveille**
Regula **Rosabelle** **Strafford**

Prices above 10, each:
5 inch plants with **4-7 canes, 80c** each.
5 inch plants with **3 canes, 75c** each.
5 inch plants with **2 canes, 65c** each.
*Treated for blue forcing unless you specify otherwise.

SHIPPED F.O.B. VIRGINIA

Our Virginia specialist offers **2¼ inch plants** from stock plants grown outdoors. Plants established in 2¼ inch pots. **Spring delivery.** Excellent quality. Minimum order, 200 plants. **Strafford** and **Merveille, $22.50** per 100; **$200.00** per 1000 and 500 at 1000 rate.

SHIPPED F.O.B. WEST VIRGINIA

Our West Virginia specialist grower produces DORMANT PLANTS of only four varieties; Merveille and Kuhnert intended primarily for blue forcing; Strafford for pink forcing; and the white, Regula. We highly recommend these plants for forcing purposes. Delivery late December to February 1, only.

	Merveille & Kuhnert Per 100	Strafford & Regula Per 100
4 inch, 1 cane	$45.00	$47.50
4 inch, 2-3 canes	62.50	65.00
4 inch, 4-5 canes	77.50	80.00
5 inch, 1 cane	60.00	60.00
5 inch, 2-3 canes	72.50	75.00
5 inch, 3-4 canes	.....	105.00
5 inch 4-5 canes	100.00	.....
5 or 6 inch, 6-10 canes	135.00	135.00

Begonias

FIBROUS ROOTED (Semperflorens)

One of our most versatile plants. Fibrous Rooted Begonias can be sold in flowering sizes as small as a 2¼ inch pot plant and as large as a 6 or 8 inch size. They respond quite well to low light, high temperature conditions of our modern homes. Particularly the stronger growing varieties do quite well as outdoor bedding plants if given partial shade. Our Fibrous Rooted Begonias are shipped in 2 inch plant bands and packed in our special Ball-Pak that assures arrival in good condition. Buy 2 inch plants in the fall for growing on into larger plants for spring or buy them during the winter or spring for quick turn-over in smaller sizes. Repotting should be done in a half peat-half soil mixture. Temperatures of at least 60° are necessary for proper growth. Also partial shade during the bright summer months.

DWARF CLASS

Adeline. Free flowering, bright pink.
Ball Deep Rose. Rosy red in winter, bright pink in spring and summer.
Luminosa Compacta. Free flowering scarlet-red.
Pink Pearl. (F_1 hybrid grown from originator's seed). Similar to Adeline in growth and color. More vigorous growth.
Red Pearl. (F_1 hybrid grown from originator's seed). Identificial to Pink Pearl except for its Luminosa-red color.
Snowbank. Large glistening white flowers on dense growing plants. Best white.

INTERMEDIATE CLASS

*(T) **Carmen.** Bright rose-pink flowers with bronze leaves.
(T) **Indian Maid.** Scarlet flowers with bronze foliage.
(T) **Scandinavia Pink.** Free flowering bright rose pink. Bushy habit.
(T) **Scandinavia Red.** Identical to above except for its bright red color.
(T) **Scandinavia White.** Same as above except white.
Assortment of above varieties in both the Dwarf and Intermediate class.
Prices on above: $12.00 per 100; **$100.00** per 1000. 250 supplied at the 1000 rate. Shipped in units of 50 plants in our Ball-Pak. Minimum order, 100; 25 of any one variety. Order in multiples of 50. Available September to June. F.O.B Ohio. *Those varieties with a (T) are also available F.O.B. Texas packed in 2¼ inch Jiffy-Pots.

DOUBLE VARIETIES

Geneva Scarlet **Geneva White** **Westport Beauty,** pink
Prices on above: 2¼ inch plants shipped F.O.B. Ohio, **$25.00** per hundred. Minimum order, 50 plants per variety. Available fall through June.
Double Carmen. Light pink flower with bronze leaves. Makes a very nice pot plant. Very popular in the Southern States, but grows well anywhere. In 2¼ inch Jiffy-Pots.
Prices: 50 to 250; **25c** each; 250 & up **$225.00** per 1000. Minimum order 50 plants. F.O.B. Texas. Available in March.

FLOWERING BEGONIAS

Begonia Sandersonii. 2¼ inch. (trailing variety).
Coralline Lucerne (True Angel Wing). 2¼ inch.
Prices: $25.00 per 100. Minimum order 50 per variety. F.O.B. Ohio.

REX BEGONIAS

Five to seven varieties in each shipment.
2¼ inch. Packed in cartons of 50 **only.**
Prices: $35.00 per 100; **$300.00** per 1000. 250 at 1000 rate.
Shipped via express F.O.B. Lockport, New York. 5% packing charge Nov. 1 to Apr. 1 as insulated cartons are used. Growing suggestions sent on all orders.

SCANDINAVIAN BEGONIAS (Norwegian)

Easy to grow, sturdy plants, thicker leaves and long lasting flowers are the features of these new Begonias. Propagation is best left to a specialist. Buy 2¼ inch plants, pot to 4's in a light soil mixture and then to 5 or 6 inch flowering pots. In flowering sizes feed every 2 weeks with ammonium sulphate, 1 oz. to 2 gals of water. One thickness of cheesecloth shade during the summer helps. Spray with Fermate or Parzate during the summer and keep foliage dry to prevent botrytis. A 55° night temperature is recommended for forcing.

For Christmas flowering buy 2¼ inch in June. For October 15 flowering, buy 2¼ inch in April or May, shift to flowering size pots by July 15; black cloth shade between 5 PM and 7 AM beginning August 15 until buds are well set. For April 1 flowering, buy 2¼ inch in September and light October 1 to February 1 with 100 watt bulbs placed 3½ feet above plants and 5 feet apart in suitable reflectors.

Tove. Medium pink, large flowers and leaves. Early.

Karolina **Solbachen** **Skavane** **Spirit of Norway**

Above varieties are very similar. Color deeper than Tove. Foliage smaller and growth more compact. Flowers normally for Christmas.

Red Solfheim **Dark Marina**

Excellent dark pink (almost red) varieties. Compact growers.

Dark Solbachen. Dark pink flowers, dark green foliage. Smaller and more compact grower than others. Slower grower but flowers for Christmas.

Compacta.

Prices on above varieties: $47.50 per 100; **$425.00** per 1000. 250 plants at the 1000 rate. Varieties may be grouped for quantity price. Minimum order 50 plants of any one variety. Order in multiples of 50 plants. Shipped express F.O.B. New York. Shipment April 15 to August 1.

SCANDIA COLLECTION

50 plants, or multiples of 50 consisting of some of each of the Scandinavian Varieties. **$52.50** per 100; **$475.00** per 1000. Packed in cartons of 50 plants each—order accordingly. 250 plants at 1000 rate. Shipped express F.O.B. New York. Available April 15 to August 1.

MELIOR (Christmas) BEGONIAS

Culture same as outlined above for Scandinavian varieties except forcing temperature should be 60°. May be shaded for early fall flowering and lighted for spring flowering.

Marjorie Gibbs **Lady Mac** **Melior**

Prices on above: 2¼ inch plants, **$42.50** per 100; **$375.00** per 1000.

Lady Mac Supreme (P.A.F.). A sport of Lady Mac that has all the good qualities of Lady Mac and so many other characteristics that it becomes a new variety. Rich glowing deep pink flowers with red flower stems. Flowers are long lasting, constantly retaining intensity of color. Leaf distinctively veined; deep green with red bronze edges. Very compact. Superior for January sales.

Prices 2¼ inch plants: **$30.00** per 50; **$55.00** per 100; **$500.00** per 1000. 250 plants at the 1000 rate. Varieties (except Lady Mac Supreme) may be grouped for quantity price. Minimum order 50 plants per variety. Order in multiples of 50 plants per variety. Shipped F.O.B. New York.

Tips On Rose Culture

7 RULES FOR STARTING GARDEN ROSES

One of the few tricky parts of Garden Rose culture is getting the plants off to a good start. The rules are simple but exacting.

● 1. Order your bare-root dormant plants and pots for delivery at least 2 months before you want to sell them as started growing plants.

● 2. When your Rose plants arrive they will be packed in containers and material that protects them from frost and drying out. If your plants arrive frozen, it is wise to file a claim with the transportation company, but there's a good chance that they will thaw out with no loss. If frozen, pack them up again and store in a cool (35° is ideal) dark place for a few days.

● 3. The most important point in handling Rose plants is to be sure the plant is NEVER allowed to dry out—either its roots or canes. It is a good idea to soak the plants in water for an hour or two as they are unpacked.

● 4. Rose plants should be pruned and potted IMMEDIATELY upon receipt. If you can't get at them immediately, leave the plants in their shipping container until you are ready to pot them.

● 5. Pruning Rose plants is another important fundamental. At the time of potting the canes should be cut off to within 6 or 8 inches of the crown of the plant. This applies to all varieties and types of Roses including the climbers. Also trim off any damaged or thick, heavy roots that are excessively long. The finer roots are the important ones.

● 6. There are several types of Rose pots available. They should be at least 6 or 8 inches wide at the top and 8 or 10 inches deep. Soil should be of a loose consistency to provide aeration and drainage. Fill up the pot with soil with frequent tamping or firming of the soil as the pot is being filled.

● 7. IMMEDIATELY AFTER POTTING, the pots should be thoroughly soaked with water. This can be done by repeated hose waterings or the pot can be immersed in a tub of water until the soil in the pot is completely saturated. The pots should be placed on a surface that allows drainage out of the bottom of the pot. Plants should be covered with some material such as burlap or straw and this covering should be kept constantly wet until growth has started—usually from 1 to 3 weeks. The time required to start dormant Roses varies with the dormancy of the plant and by varieties. Don't be discouraged if some plants start out quicker than others. 55° is a good temperature for starting Roses although some growers prefer 45 to 50° to encourage root action before top growth begins.

Just as soon as top growth has started, the covering should be removed and the plants exposed to full sun.

WHICH GRADE OF ROSES SHOULD YOU BUY?

BALL GARDEN ROSES are graded according to standards established by the American Association of Nurserymen. This grading system provides a certain minimum number of canes of certain minimum lengths. These grades vary with varieties (lighter growing varieties have lower standards than heavier growing varieties). Also floribunda varieties have lighter grading standards because of their growing habits.

No. 1 grade Roses are the heaviest bushes and of course, will produce the largest plants in the garden. No. 1 ½ grade bushes are smaller than No. 1's but are in no sense culls or any the less salable plants; they simply have fewer canes. Many florists buy 1 ½'s with their 1's to offer at a lower price. No. 2 grade bushes are the smallest grade and generally have only 1 strong cane as compared to 3 and 2 canes respectively for grades 1 and 1 ½. If you are interested in No. 2 grade bushes we will gladly quote on your requirements.

FORCING POT ROSES

Pot forcing Roses should be potted approximately 3 months before they are to flower. Since they should be potted immediately upon receipt, order the plants for delivery at the time you want to pot them.

As soon as plants are received they should be unpacked, immersed in water for a short time (or wet down thoroughly and covered with moist burlap for a day or two) and potted. If plants arrive in a frozen condition, chances are they can be successfully thawed out by leaving them in their packing cases and storing in a 35° temperature for 3 or 4 days. If freezing is suspected, be sure to notify the transportation company immediately so that a claim may be filed later if the plants are damaged.

At the time of potting, dormant plants should be pruned back to within 6 or 8 inches of the bud union—the swollen section of the lower stem from which the canes grow. Generally speaking, higher pruning results in taller plants and lower pruning (6 inches) results in shorter, bushier plants.

Any good greenhouse soil with 1 part in four of peat moss or well rotted manure is satisfactory. Be sure to tamp the soil well as plants are potted so that no air pockets form around the roots. A 6 or 7 inch pot is required for proper root growth.

During potting, roots should be pruned as little as necessary. Bear in mind that the fine, fibrous roots are the ones that help the plant off to a quick start.

Immediately after potting, Rose plants should be placed in 50° and kept well watered and in high humidity. After 2 weeks roots will have become established and the temperature should be increased to 58° to encourage top growth. Rose plants require plenty of water (both in the soil and in the atmosphere) during their first two to four weeks. This may be accomplished by frequent syringing or misting. Some growers cover plants with wet burlap; however, this covering should be removed as soon as shoots begin to appear.

As soon as shoots are well started (2 or 3 weeks) the plants can be moved into full sunlight. Feeding with a soluble nitrogen or a balanced fertilizer should be done about three times during the plant's growth with the first application about 6 weeks after potting.

The question of whether or not to pinch pot Roses varies with growers. Some growers do not pinch at all. Others use pinching not only to develop more flowers but also to help time their crop. For instance, if an Easter crop is planted January 1 and given a soft pinch February 1, the plants should flower by April 1—8 weeks after pinching. A Mother's Day crop should be pinched 7 weeks before flowering. Control of flowering time is also possible by adjusting temperatures. The basic forcing temperature should be 58° but the crop can be advanced with a higher temperature (62°) or retarded with lower temperatures. Bear in mind however, that temperatures above 58° are apt to result in loss of quality in the finished plant. Flower shattering, for instance, is encouraged by too high temperatures.

Plants forced for Easter and not sold may be pinched back for a later crop. A pinched plant should flower in about 6 weeks from an Easter pinch.

Geo. J. Ball INC.

Ball Garden Roses

When you sell BALL GARDEN ROSES potted and growing, your customers are **assured** of getting Rose plants that will live and flower. As we all know, this is not always true when gardeners buy dormant Roses by mail or from corner grocery stores.

BALL GARDEN ROSES are the best obtainable. They are budded on contract for us by the finest West Coast growers. At the end of their second season of growth, BALL GARDEN ROSES are allowed to go dormant naturally, and are dug, graded, and packed in special refrigerated cars. These cars come directly to our West Chicago cold storage room (or eastern cold storage plants for eastern customers) where they are stored under controlled temperature and humidity to maintain their dormancy until you get them. We are justly proud of BALL GARDEN ROSES and believe you and your customers will be too. If you are not one of our regular customers why not give us a trial order?

Place your order EARLY! BALL GARDEN ROSES are budded for us two years in advance. We do **not** buy Roses the last minute on the open market. When our crop is booked up we are sold out for the season. All orders accepted in order of their recepit.

Be sure to specify when you want your Roses shipped. We can ship any time from January through spring. See page 113 for "7 Rules for Starting Garden Roses." Containers for potting Roses are listed on page 117.

FUSILIER

GOLD CUP

PATENT FLORIBUNDAS

Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10 Each	20-90 Each	100-250 Each
$2.00	**Baby Blaze** (1362). Velvety cherry red	$1.10	$1.00	$ .95
2.25	**China Doll** (678). Deep pink. Low growing	1.25	1.12½	1.05
2.50	***Circus** (1382). Bicolor red and yellow	1.40	1.25	1.20
2.00	***Fashion** (789). Coral pink	1.10	1.00	.95
2.50	***Fusilier** (P.R.R.) Orange red. See above	1.40	1.25	1.20
2.50	***Gold Cup** (P.R.R.) Bright yellow. See left	1.40	1.25	1.20
1.75	**Goldilocks** (672). Yellow	1.00	.87½	.80
1.75	**Independence** (1036). Spectrum red	1.00	.87½	.80
2.00	***Jiminy Cricket** (1346). Coral orange	1.10	1.00	.95
2.00	***Ma Perkins** (1143). Coral shell pink	1.10	1.00	.95
1.75	**Pink Bountiful** (601). Deep rose pink	1.00	.87½	.80
1.75	**Pinocchio** (484). Rich salmon	1.00	.87½	.80
1.75	**Red Pinocchio** (812). Carmine	1.00	.87½	.80

PATENT FLORIBUNDAS—Continued

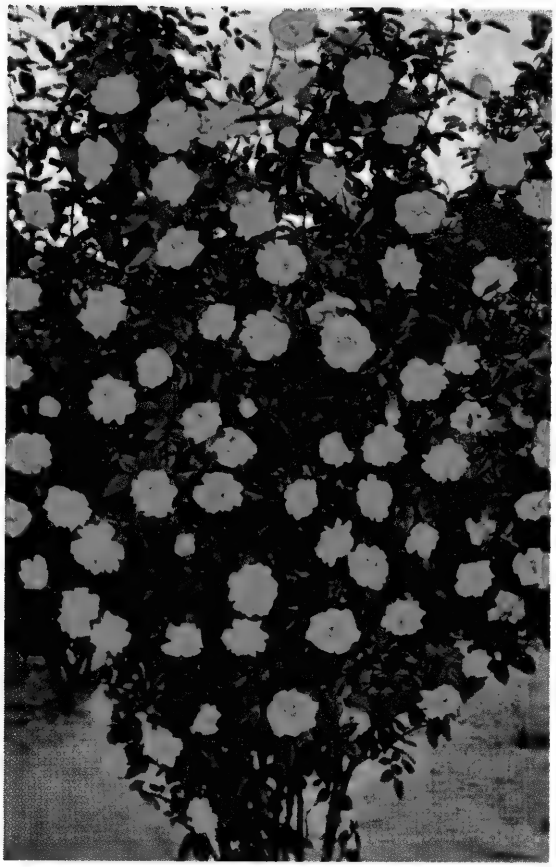
Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10 Each	20-90 Each	100-250 Each
$1.75	**Siren** (1197). Vivid red	$1.00	$ .87½	$ .80
2.75	**Spartan** (1357). Reddish coral	1.50	1.37½	1.30
1.50	**Summer Snow** (416). White	.90	.75	.70
2.00	**Valentine** (1029). Bright red	1.10	1.00	.95
2.00	***Vogue** (926). Cherry Coral	1.10	1.00	.95
2.50	***White Bouquet** (1415). White	1.40	1.25	1.20
1.50	**White Pinocchio** (1010). White	.90	.75	.70
1.50	***World's Fair** (362). Deep red	.90	.75	.70
1.50	**Yellow Pinocchio** (992). Yellow	.90	.75	.70

PATENT CLIMBERS

Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you pay) 10 Each	20-90 Each	100-250 Each
2.50	**Cl. Aloha** (948). Coral pink	$1.40	$1.25	$1.20
2.75	**Cl. Chrysler Imp.** (1528). Flaming red	1.50	1.37½	1.30
2.50	**Cl. Crimson Glory** (736). Deep red	1.40	1.25	1.20
2.75	***Cl. Golden Showers** (1557). Yellow climber	1.50	1.37½	1.30
2.00	**Cl. King Midas** (586). Yellow	1.10	1.00	.95
2.25	**Cl. Peace** (932). Yellow edged pink	1.25	1.12½	1.05

PATENT GRANDIFLORAS

Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10 Each	20-90 Each	100-250 Each
2.50	**Buccaneer** (1119). Sunshine yellow	$1.40	$1.25	$1.20
2.00	**Carrousel** (1066). Deep rich red	1.10	1.00	.95
2.75	**Montezuma** (1383). Scarlet-orange	1.50	1.37½	1.30
2.50	***Queen Elizabeth** (1259). Delicate clear pink. Right.	1.40	1.25	1.20
2.50	**Roundelay** (1280). Vivid glowing red	1.40	1.25	1.20



GOLDEN SHOWERS

QUEEN ELIZABETH

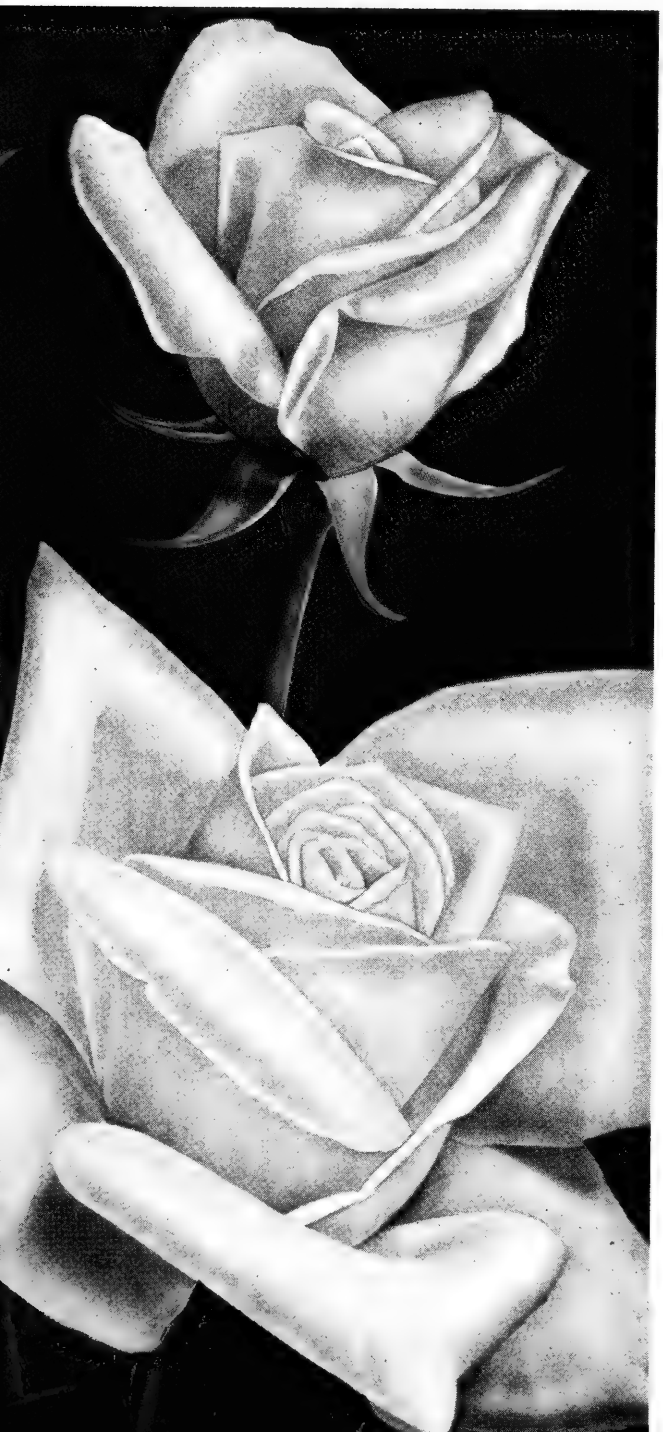
#1½ Grade 20% less than #1. Write us for special prices on more than 250 of any patented varieties. MINIMUM ORDER 10 PLANTS OF A VARIETY. ORDER IN MULTIPLES OF 10. Prices are "per variety" on all Patent Varieties regardless of total number of bushes you order.

***All-America Rose Selection Winners.**

PATENT HYBRID TEAS

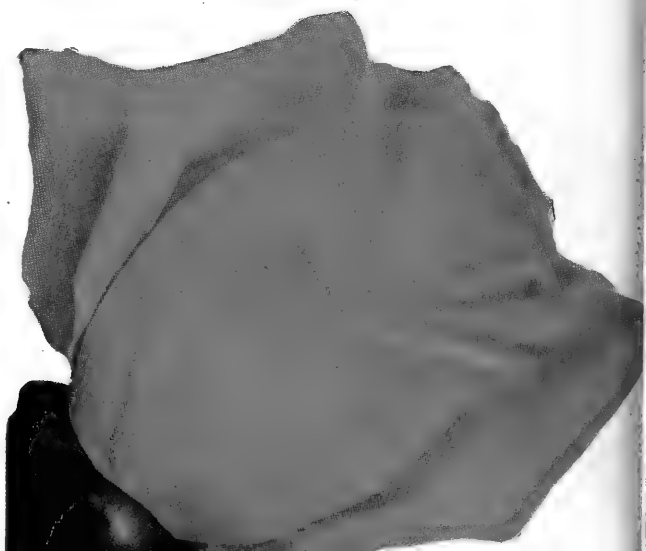
Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10 Each	20-90 Each	100-250 Each
$2.25	**Blanche Mallerin** (594). Pure white	$1.25	$1.12½	$1.05
2.00	*__Capistrano__ (922). Bright pink	1.10	1.00	.95
2.25	*__Charlotte Armstrong__ (455). Red bud, cerise flower	1.25	1.12½	1.05
2.50	*__Chrysler Imperial__ (1167). Crimson	1.40	1.25	1.20

WHITE KNIGHT



Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10 Each	20-90 Each	100-250 Each
$2.25	**Confidence** (1192). Light pink to yellow	$1.25	$1.12½	$1.05
2.00	*__Diamond Jubilee__ (824). Buff yellow	1.10	1.00	.95
2.25	*__Forty-niner__ (792). Vivid red and yellow	1.25	1.12½	1.05
2.00	*__Fred Howard__ (1006). Yellow edged pink	1.10	1.00	.95
2.75	**Golden Masterpiece** (1284). Golden yellow. See below	1.50	1.37½	1.30
2.00	**Golden Scepter** (910). Yellow	1.10	1.00	.95
2.25	**Grand'mere Jenny** (1148). Yellow, capucine red	1.25	1.12½	1.05
2.00	**Happiness** (911). Dark red	1.10	1.00	.95
2.75	*__Helen Traubel__ (1028). Pink apricot	1.50	1.37½	1.30
1.75	*__K. T. Marshall__ (607). Pink flushed yellow	1.00	.87½	.80
2.25	*__Lowell Thomas__ (595). Lemon yellow	1.25	1.12½	1.05
2.25	*__Mirandy__ (632). Dark red, fragrant	1.25	1.12½	1.05
2.00	*__Mission Bells__ (923). Vermillion pink	1.10	1.00	.95
2.75	*__Mojave__ (1176). Orange	1.50	1.37½	1.30
2.25	**New Yorker** (823). Rich red	1.25	1.12½	1.05
2.25	*__Nocturne__ (713). Dark red	1.25	1.12½	1.05
2.50	*__Peace__ (591). Yellow edged pink	1.40	1.25	1.20
2.00	**Sleigh Bells** (1004). White, creamy center	1.10	1.00	.95
2.25	*__Sutters Gold__ (885). Yellow, shaded red	1.25	1.12½	1.05
2.50	*__Tiffany__ (1304). Pink, yellow base	1.40	1.25	1.20
3.00	*__White Knight__ (1359). Pure White. See left	1.65	1.50	1.40
2.25	**White Swan** (1115). Pure white	1.25	1.12½	1.05

GOLDEN MASTERPIECE



Ball Garden Roses

STANDARD HYBRID TEAS

RED	YELLOW	PINK	BICOLOR	WHITE
Ami Quinard	Eclipse	Editor McFarland	Autumn	Frau Karl Drushki
Better Times	Golden Dawn	Margaret McGredy	Condesa De Sastago	K. A. Victoria
Christopher Stone	Joanne Hill	Peters Briarcliff	Countess Vandal	
Crimson Glory	McGredy's Yellow	Picture	Pres. Hoover	
Etoile De Hollande	Mrs. E. P. Thom	Pink Dawn	Talisman	
McGredy's Scarlet	Mrs. P. S. DuPont	Pink Radiance		
Red Pres. Hoover	Soeur Therese	The Doctor		
Red Radiance				
Poinsettia				

STANDARD FLORIBUNDAS

RED	YELLOW	PINK	WHITE
Eutin	Golden Salmon	Betty Prior	Dagmar Spaeth
Floradora	Poulsen's Yellow	Cecile Brunner	
Frensham		Else Poulsen	
Imp. Lafayette		Poulsen's Bedder	
		Rosenelfe	

STANDARD CLIMBERS

RED	YELLOW	PINK	BICOLOR	WHITE
Cl. Blaze	Cl. Gold Rush	Cl. New Dawn	Cl. Pres. Hoover	Cl. Snowbird
Cl. Etoile De Hollande	Cl. Yellow Talisman	Cl. Pink Radiance	Cl. Talisman	
Cl. Paul's Scarlet				

IMPORTANT!

Prices quoted at right are F.O.B. West Chicago, or F.O.B. Baltimore, New Jersey or Pittsburgh if your order totals 100 or 250 plants or multiples thereof (our standard packing case sizes) and if your order is received by us before November 10.

PRICES STANDARD VARIETIES

	Per 10	Per 100	Per 1000
No. 1 Grade	$6.50	$60.00	$550.00
No. 1 ½ Grade	5.25	47.50	425.00

All Rose bushes sold in units of 10 plants of a variety and grade or multiples of 10. Standard varieties may be grouped for quantity rate.

TREE ROSES

We offer a very complete list (65 varieties) of both patented and standard garden Roses on 30 to 36 inch stems. We will be glad to mail you our complete list of varieties available. We do not stock Tree Roses. All orders must be in by November 1, 1958 for shipment F.O.B. West Chicago from early January, 1959 on. Minimum order 20 trees, 5 or multiples of 5 of any one variety.

Either patented **or** standard varieties may be grouped for the lowest quantity price, but patented **and** standard varieties may **NOT** be grouped together.

PATENTED VARIETIES	Grade 1 Each	Grade 1 ½ Each
20-95 Trees	$3.50	$3.30
100-245 Trees	3.25	3.05
250-Up	3.00	2.80
STANDARD or NON-PATENTED VARIETIES:		
20-95 Trees	$3.00	$2.85
100-245 Trees	2.75	2.60
250-Up	2.50	2.35

BIRD PERENNIAL POTS

Garden Roses already started in pots bring premium prices and satisfied customers.

The 9½ inch deep Perennial Pot is ideal for this purpose—made of a tough, durable material with a hard, smooth coating inside and out—solid stapled bottom with openings for drainage.

PRICES

Height	Top Diam.	Wt. per 1000	Per Case of 200	Per 1000
9½in.	7 in.	355 lbs.	$14.50	$69.00

Minimum order, case of 200. Three cases at 1000 price. Prices net, F.O.B. our West Chicago warehouse or factory near Boston.

Ball Forcing Pot Roses

SEE BACK COVER FOR TWO NEW GARNETTE SPORTS

Our Roses for pot forcing are budded to our order by a West Coast specialist. As a result of years of experience, we are confident that no finer plants are available at any price. We earnestly suggest placing your order with us EARLY so we can furnish you the varieties and grades you need. Our pot forcing Roses are budded for us 2 years in advance. We do **not** buy plants the last minute on the open market. When our crop of a variety is booked up, we are sold out for the season. All orders accepted in the order of their receipt. Shipment December through February. See page 113 for cultural suggestions on pot Rose forcing.

We recommend XXX grade plants for large specimen plants and XX grade for medium sized plants. Varieties we particularly recommend are starred (*).

STANDARD VARIETIES

Bright Pink Garnette. A bright, deep pink sport of Garnette. Large flowered.

Bonfire (Climber). Scarlet. Used for particularly large specimen plants that are trained into "basket" shapes, large circles, etc.

Dick Koster. Bright salmon rose.

***Garnette.** This popular floribunda cut flower variety is excellent for pot forcing. Attractive bronzy-green foliage and rich red flowers.

Gloria Mundi. Salmon.

Magna Charta. Bright pink.

***Margo Koster.** The popular salmon-orange with globular shaped flowers.

***Mother's Day.** A red sport of Margo Koster. Excellent for Easter and later.

Triumphe D'Orleans. Carmine or cherry red.

Prices on above standard varieties:

XXX GRADE: 69c each or **55c** each for orders totaling 1,000 or more. **Minimum order 10 of a variety.**

XX GRADE: 59c each or **45c** each for orders totaling 1,000 or more. **Minimum order 10 of a variety.**

SPECIAL CASE PRICE ON **STANDARD VARIETIES ONLY:**

Case of 100 plants, XXX grade.....**$ 60.50**
Case of 200 plants, XXX grade..... **121.00**
Case of 160 plants, XX grade..... **72.50**

All **standard varieties** may be grouped to take advantage of lowest quantity price. Packing on Pot Forcing Roses charged at cost.

OUR SPECIAL POT FORCING ROSE COLLECTION

—all XXX grade plants

40 Triumphe D'Orleans	10 Margo Koster
20 Garnette	10 Magna Charta
10 Dick Koster	10 Bright Pink Garnette

$63.00 including packing charge.

PATENT VARIETIES

***Carol Amling** (Pat. 1126). A light coral pink sport of Garnette. Excellent.
Crimson Rosette (Pat. 901).
Irene of Denmark (Pat. 889). White.
Pink Rosette (Pat. 902). Soft pink.

Prices on each of above patented varieties:

XXX GRADE

10 plants, **$1.00** each; 20-90 plants, **87½c** each; 100-250 plants, **80c** each; More than 250 plants **75c** each.

Minimum order 10 of a variety.

XX GRADE

10 plants **80c** each; 20-90 plants, **70c** each; 100-250 plants, **64c** each; More than 250 plants, **60c** each.

Minimum order 10 of a variety. Prices on patented varieties are **per variety.** Patented varieties **cannot** be grouped with standards for quantity prices.

Orders for case lots or more including our special pot Rose forcing collection received by us before November 1 may be shipped F.O.B. West Chicago, New Jersey, Pittsburgh, or Minnesota. All other orders shipped F.O.B. West Chicago. Minimum order, 10 plants of a variety.

TRY MINIATURE ROSES

The following varieties are excellent for border work. All are very hardy. Those best adapted for pot forcing are starred (*); may be flowered in 6 weeks in a 60° night temperature. These are furnished as "own root" 3 inch plants in a dormant condition. Delivery F.O.B. Pennsylvania either spring or fall.

Minimum order, 50 plants, 10 plants of a variety. Cultural instructions with each order.

Retail Minimum Retail Price	Variety and Description	Wholesale Price Each (Price you Pay) 10-99	100-249	250-up
$1.50	**Baby Gold Star** (Pat. #407). Golden yellow. To 14 in. high	$0.75	$0.70	$0.60
1.25	***Cinderella** (Pat. #1051). Cream white sometimes tinged cameo-pink. Double. Extra fine Hybrid Tea form. Thornless and grows to 10 in high	.62½	.57½	.50
1.25	**Midget** (Pat. #466). The tiniest rose-red. Fully double miniature. Almost thornless. To 9 in. high	.62½	.57½	.50
1.25	***Pixie** (Pat. #408). The smallest double white Rose. Shows pink shading in cool weather. To 8 in. high	.62½	.57½	.50
1.25	***Red Imp** (Pat. #1032). Deep, rich crimson. Very double, almost star-shaped flowers. To 10 in. high	.62½	.57½	.50
1.50	**Robin** (P.A.F.). New, 1957 bright red. Compact plants and very free blooming. To 10 in. high	.75	.70	.60
1.25	***Sweet Fairy** (Pat. #748). Dark pink buds open to double 1 inch flowers of apple-blossom pink. Fragrant. To 10 in. high	.62½	.57½	.50
1.25	**Tinker Bell** (Pat. #1293). Bright vivid pink. Very double, long lasting blooms. Very hardy. To 8 in. high	.62½	.57½	.50
1.25	**Tom Thumb** (Pat. #169). Crimson buds grow lighter as blooms open into well-formed, perfect, tiny Roses. To 9 in. high	.62½	.57½	.50

Foliage Plant Specials!

FOR THE SMALLER GROWER WHO CAN'T BUY IN LARGE QUANTITIES BUT WHO NEEDS A WIDE VARIETY OF HOUSE PLANTS TO SATISFY HIS CUSTOMER DEMAND.

BALL SPECIAL FOLIAGE PLANT COLLECTION

Notice all plants are in smaller sizes, which means less transportation cost. You can either pot them and sell almost immediately as small house plants, or you can grow them on to larger sizes and more profit. Plants used for these collections are exactly the same grade and quality as used for our regular bulk orders. We reserve the right to make substitutions of equal or better sizes and varieties in the event of shortages.

25 Chinese Evergreen, R.C., 3 to 5 inches....3 to 6 leaves
15 Dracaena Sanderiana, R.C.....5 to 10 leaves
25 Maranta Kerchoveana, R.C.....3 to 7 leaves
25 Nephthytis Emerald Gem, R.C.....3 to 5 leaves
25 Nephthytis Green Gold, R.C.....3 to 5 leaves
25 Peperomia, variegated, R.C.....3 to 5 leaves
25 Peperomia Obtusifolia, R.C.....3 to 5 leaves
100 Philodendron Cordatum, R.C.....3 to 5 leaves
25 Pilea Cadierei (Aluminum Plant), R.C.....4 to 8 leaves
25 Pothos Wilcoxi, R.C. .....3 to 5 leaves
25 Sansevieria Laurenti, 4 to 6 inches.....3 to 5 leaves

SPECIAL FOLIAGE PLANT COLLECTION (340 plants) for $28.75

Shipping wt. 18 lbs. approx. (Slightly heavier during winter).

BALL 4-IN. PHILODENDRON COLLECTION

(Large-Leaved)

Demand for these large-leaved Philodendrons is increasing fast—and with good reason! They respond well to ordinary living room conditions and are beautiful in either small or large sizes. Our collection contains plants of the four popular leaf types and varieties. Four inch plants can be sold almost immediately or they can be grown on into larger sizes. Plants shipped in paper pots.

10 Pertusum. The most popular of the large-leaved kinds.
6 Hastatum. Excellent for totem poles. Enjoys shade and should not be overwatered.
4 Selloum. Leaves deeply cut. Self-heading—will not grow tall and lanky. Can stand bright light.
4 Panduriforme. Requires moist, well-drained soil and shade.

24 plants for $20.35.

P. PERTUSUM

SPECIAL STANDING ORDER QUANTITY DISCOUNT!

Our special 5% discount from the above quoted prices applies on orders for 3 or more of the above collections—applies on orders for either collection or any combination of the two. To assure a continuing supply, why not order collections to be shipped at regular intervals throughout the season? Be sure to specify when shipments are to be made.

Above collections are shipped F.O.B. Florida and are available throughout the year.

P. PANDURIFORME

P. HASTATUM

P. SELLOUM

We particularly solicit standing orders for Foliage Plants. When ordering be sure to specify delivery date and at what intervals repeat shipments are to be made.

TRY US WITH A STANDING ORDER.
WE'RE SURE YOU WILL BE HAPPY YOU DID!

Ball Decorative

In this section of our Plant Department catalog we've listed all plants grown and used for their foliage. We've also combined our Florida and Puerto Rican offerings. For instance, our Philodendron cordatum offering includes under one heading Started Eyes from Puerto Rico as well as rooted cuttings and potted plants from Florida. We think this presentation will make it easier for you to decide which sizes of plants you want because they're all listed in one place with prices and shipping points shown in each case.

The sale of Foliage or "green" plants has risen phenomenally during the past 15 years. EVERYONE with an apartment or house buys them—not only once but several times a year. You can buy smaller-sized plants as listed below and either sell them for a quick-turnover crop or grow them on into larger sizes for increased profit. Many growers are buying larger sized plants for a "high ticket" quick turnover crop.

BALL DECORATIVE FOLIAGE PLANTS are produced by leading Florida specialist growers. You will find our prices competitive and above all, **our quality is unexcelled.** If you are not one of our regular Foliage Plant customers, why not give us a trial order?

ACHYRANTHES

The popular decorative foliage, outdoor bedding plant. Delivery September to January. F.O.B. Indiana or Ohio. Minimum order 100 plants per variety and size.

Dark Red (Burgundy). Vigorous growing.

	Per 100	Per 1000
R.C.	**$4.75**	**$42.50**
2¼ in.	**8.50**	**77.50**

Green and Yellow Variegated. Vigorous growing.

R.C.	**4.75**	**42.50**
2¼ in.	**8.50**	**77.50**

Brilliancy. Dwarf, small-leaved bright red

R.C.	**5.50**	**50.00**
2¼ in.	**10.50**	**97.50**

AGLAONEMA
(Chinese Evergreen)

Excellent plants for dry, dark locations. Widley used in smaller sizes for dish gardens.

Simplex. Rooted Cuttings. Pictured at left.

	Per 100	Per 1000
3-5 in., 3-6 leaves. F.O.B. Fla.	**$ 9.00**	**$ 80.00**
4-6 in., 4-6 leaves. F.O.B. Fla.	**12.00**	**110.00**
5-7 in., 4-7 leaves. F.O.B. Fla.	**14.00**	**128.00**
6-8 in., 5-7 leaves. F.O.B. Fla.	**22.50**	**215.00**
6-8 in. F.O.B. P.R.	**11.50**	**105.00**
8-10 in., 6-8 leaves. F.O.B. Fla.	**27.50**	**260.00**
10-12 in., 6-9 leaves. F.O.B. Fla.	**32.50**	**310.00**
8-12 in F.O.B. P.R.	**14.00**	**132.50**
12-15 in., 6-9 leaves. F.O.B. Fla.	**37.50**	**365.00**
12 in. up. F.O.B. P.R.	**17.00**	**160.00**

Available thruout the year. Minimum order 100 cuttings of sizes 3-5 in., 4-6 in., and 5-7 in. Other sizes, 50 cuttings minimum.

Commutatum. Pictured at left. Upright growing. Leaves marked with white. F.O.B. P.R.

R.C. 5-7 in.	**10.75**	**100.00**
R. C. 8-12 in.	**12.25**	**115.00**
2¼ in., 5-7 in. Shipping weight approximately 260 lbs. per 1000	**17.00**	**160.00**
2¼ in., 8-12 in.	**24.50**	**227.50**

Roebelini (Schizmatoglottis). A very showy, robust and durable house plant. Must have 65° or over. Broad, gray-green leaves variegated with silver. Generally similar to A. simplex in growing habit. F.O.B. P.R.

2¼ in., 6-8 in.	**36.00**	**340.00**
2¼ in., 8-12 in.	**40.00**	**380.00**

Aluminum Plant. See Pilea Cadierei, page 2.

Foliage Plants

WHY BUY FROM PUERTO RICO?

Lower cost to you is the most compelling reason. This is particularly true of comparatively lightweight rooted and unrooted cuttings. Chinese Evergreen, the Dracaenas, Peperomias, and started eyes of Philodendron cordatum and Pothos are good examples. Transportation cost is the critical factor. Nearly all plants must be air-freighted at least to Miami or New York. To offset this, Puerto Rican producers have the two big advantages of low labor cost (¼ to ⅓ of U.S. producers) and a tropical climate with its uniform temperatures and rainfall.

From our inspection trips over the past several years, we know the quality of our suppliers is excellent. They are quality conscious, experienced plantsmen.

The burrowing nematode quarantine imposed by certain citrus-growing states (Texas, Arizona and California) is a problem. In general, unrooted cuttings and moss-layers are easiest. If you live in one of these states, we will be glad to tell you what plants can feasibly be shipped to you from Puerto Rico. If you haven't tried Puerto Rican foliage plants, study our offerings on this and the following pages carefully—you'll find some money-saving opportunities.

Economical air-freight rates specify 100 lb. minimum shipment weights, so be sure each shipment of your order totals at least 100 lbs.

APHELANDRA LOUISA

A very attractive new tropical foliage plant. Leaves dark green with prominent white stripes along the center and side veins. Brilliant yellow, four-sided, terminal flower spikes. Prefers diffused light. Rapid grower. (Pictured opposite page.)

3 in. plants in plastic pots packed 25 per case. **50c** each. F.O.B. Ohio. Minimum order 25 plants. Please order in multiples of 25.

ASPARAGUS

Heavy 2¼ in. plants of **Sprengeri** or **Plumosus** shipped from Indiana June through fall. **$11.00** per 100; **$100.00** per 1000. Minimum order, 100 plants; 250 billed at the thousand rate.

BOXWOOD
(Buxus japonica)

The standard small dish garden plant.

	Per 100	Per 1000
Rooted Cuttings. F.O.B. Calif.	**$7.00**	**$65.00**

CACTI AND SUCCULENTS

We offer a complete selection of over 100 varieties of these interesting miniatures. We will be happy to send you our complete list on request. Following are three assortments that have been our biggest sellers.

	Per 100	Per 1000
All-Purpose Superior. Cacti and Succulents. Includes the better, more durable and showier types in 15 or more varieties. This is our best commercial assortment. Minimum order, 100 plants. F.O.B. Calif.	**$5.50**	**$52.50**
Small Foliage Plant Assortment. Made up especially for dish garden work. Consists mostly of Billbergias, Variegated Ivy, Philodendron, Peperomia, Boxwood, Cryptanthus, Euonymus, etc. Minimum order, 100 plants. F.O.B. Calif.	**9.00**	**87.50**
Haworthia Assortment. An assortment of many types of this interesting plant. F.O.B. Calif. Minimum order 100 plants.	**10.00**	**95.00**

Begonias, see page 112.

Chinese Evergreen. See Aglaonema, page 120.

FIVE IMPORTANT POINTS TO REMEMBER IN GROWING FOLIAGE PLANTS

1. Soil mixtures should be heavily organic. For instance, a mixture of 1 part greenhouse soil, 1 part sand and 2 parts peat moss is good.
2. Regular feeding is important to keep plants growing and in good leaf color. Use either a balanced fertilizer or nitrogen alone fed in liquid form.
3. Temperatures should be a **minimum** of 65 to 70°, and higher than this for certain kinds.
4. High relative humidity is important. A mist installation is ideal. Otherwise keep walks and under benches wet constantly. 80% relative humidity is ideal.
5. Shade is important. Light shade during the northern winter months and heavy shade during summer. Shade prevents sunburning and helps bring out beautiful colors and textures of leaves.

COLEUS

Require a minimum of 60° and shade during spring and summer. We offer **rooted cuttings** of the following varieties and mixture. Minimum order 100 cuttings. 500 or more priced at the 1000 rate.

Butterfly. Butterfly leaf with red streak and notched edge.

Brilliancy. Dark red with gold border.

Christmas Gem. Green leaf mixed with red.

Hollywood Red. Red with gold edging. Notched leaf. One of the finest bedding varieties. Dwarf and low branching.

Golden Bedder. Pure yellow.

Gold Bound. Red with gold edge.

Prices of above 6 varieties, each: Rooted cuttings, **$4.50** per 100; **$40.00** per 1000. F.O.B. Ind.

Assorted Bright Colors. **$4.00** per 100; **$35.00** per 1000. F.O.B. Ill., Ind., Penn., Ohio, and Mass.

CROTON

Requires full sun, plenty of water and at least 65°. Florida stock available during spring and summer only. Puerto Rican cuttings available throughout the year. Offered in assorted varieties only.

R.C. A particularly fine selection of fancy-colored varieties in large leaved types. F.O.B. Fla. **$70.00** per 100.

2¼ in. A good mixture of popular varieties. Medium sized leaves. F.O.B. Fla. **$27.50** per 100.

3 in. Same as above but larger plants. F.O.B. Fla. **$37.50** per 100.

3 in. An assortment of the best varieties in medium and large leaved types. F.O.B. Fla. **$53.50** per 100.

U.R.C. An assortment of large leaved types. F.O.B. P.R. **$8.00** per 100; **$75.00** per 1000.

Cane. Same assortment as above. F.O.B. P.R. **$7.50** per 100 feet of cane.

CRYPTANTHUS TRI-COLOR
(Rainbow Plant)

A strikingly beautiful and very hardy house plant. A member of the Bromeliad family mostly native to Brazil, Cryptanthus are quite tolerant of living room temperatures but require as much light as possible. Watering should be light during the darker winter months but heavier during summer. Pot in very loose soil. **Crypthanthus Tri-color** has a long, narrow leaf, green in the middle with yellow and red stripes on the outside. Shipped F.O.B. Pittsburgh. Minimum order 25 plants of each size.

Unrooted plants for 2¼ in. pot. **50c** each.

Unrooted plants for 2½ in. pot. **75c** each.

3 in. size. **75c** each.

4 in. size. **$1.00** each.

DICHORISANDRA REGINAE

A very excellent, easily grown and hardy foliage plant. See picture, page 123. Leaves are dark green, striped and mottled light green. Underside of leaves purplish red. Pot in very well drained soil—straight German Peat is fine. Thrives in very dark locations and SHOULD BE FED AND WATERED VERY SPARINGLY. Tolerates temperatures between 50 and 90°. We offer 2¼ in. plants at **$18.00** per 100 or **$160.00** per 1000. Shipped throughout the year, F.O.B. Florida.

DIEFFENBACHIA

One of our showiest indoor foliage plants. Quite tolerant of indoor conditions. Plants should be kept on the dry side. Temperatures between 55 and 68° are ideal. Grow in straight peat or a mixture of half peat and half soil. Should be shaded from direct sun.

Picta. Green leaves blotched greenish white.

Propagating cane. Weighs approximately 165 lbs. per 1000 ft. F.O.B. P.R. **$18.00** per 100 ft.; **$155.00** per 1000 ft.

3 in. 4-7 leaves. F.O.B. Fla. **$37.50** per 100; **$350.00** per 1000. Packed 36 plants per carton. Please order a minimum of 36 or multiples of 36. Shipped in plastic pots.

Roehrsi (Rudolph Roehrs). Yellowish-green leaf blotched ivory and edged green. An excellent indoor house plant, being very tolerant of modern living room conditions.

Propagating cane. F.O.B. P.R. **$34.50** per 100 ft., **$320.00** per 1000 ft.

3 in. 4-7 leaves. F.O.B. Fla. Shipped in plastic pots and packed 36 per carton. Please order minimum of 36 or in multiples of 36. **$43.50** per 100; **$400.00** per 1000.

Roehrsi Superba. An improved Picta type. More pronounced variegation, more leathery leaves, and a compact grower.

2 in. 6-8 in. tall. F.O.B. P.R. Shipping weight approximately 180 lbs per 1000. **$32.00** per 100; **$280.00** per 1000.

Bausei. The most colorful of the Dieffenbachias. Greenish yellow pointed leaf with dark green edge and midrib and white spots. 2¼ in. with 3-6 leaves. Approximate shipping weight, 260 lbs. per 1000. F.O.B. P.R. **$30.00** per 100; **$285.00** per 1000.

DRACAENA

Coming to us from equatorial Africa, Dracaenas are one of our finest house plant groups. Enjoy ample water and good drainage. Use at least 50% peat in soil mixture. Temperatures between 65 and 80° are ideal. Provide some shade from direct sun.

Godseffiana. Low growing plant with yellow-dotted, glossy green leaves on wiry stems. Widely used for small planters and dish gardens. Pictured on page 123.

	Per 100	Per 1000
U.R.C. F.O.B. P.R.		
2 tiers of leaves. Approximate shipping weight, 25 lbs. per 1000	$ 5.00	$ 48.00
3 tiers of leaves. Approximate shipping weight, 45 lbs. per 1000	6.50	58.00
R.C. F.O.B. P.R.		
2 tiers of leaves	7.00	65.00
3 tiers of leaves	8.50	80.00
1½ in. F.O.B. P.R. 2 plants per pot. Approximate shipping weight, 160 lbs. per 1000	15.00	140.00
2 in. F.O.B. P.R. 3 plants per pot. Approximate shipping weight, 240 lbs. per 1000	17.00	155.00
2¼ in. F.O.B. Fla, or Ohio. 5-9 leaves.	20.00	190.00

DRACAENA, Continued

Sanderiana. A highly attractive house plant that seems to thrive on neglect. Two broad white bands bordering gray-green foliage. Very desirable in smaller sizes for planters and dish gardens. See opposite page.

	Per 100	Per 1000
U.R.C. F.O.B. P.R.		
4-6 in. Approximate shipping weight 26 lbs.	$ 6.75	$ 62.50
6-8 in.	7.25	67.50
8-10 in.	7.75	72.50
R.C.		
4-6 in. Approximate shipping weight, 50 lbs. per 1000. F.O.B. P.R.	8.00	75.00
6-8 in. F.O.B. P.R.	8.50	78.50
8-10 in. F.O.B. P.R.	9.00	85.00
5-10 leaves. F.O.B. Fla.	17.00	160.00
2¼ in 5-9 leaves. F.O.B. Fla. or Ohio.	22.50	210.00

Warnecki. Upright gray-green leaves with narrow white stripes along leaves with white penciling. A very satisfactory house plant.

U.R.C. F.O.B. P.R.		
6-8 in.	18.00	170.00
8-12 in.	21.00	200.00
12-15 in. Approximate shipping weight, 140 lbs. per 1000	28.00	260.00
2¼ in. F.O.B. P.R.		
8-12 in.	31.00	290.00
12-15 in.	34.00	320.00

Massangeana. Broad grass-green leaves with golden band down the center of each. Enjoys high temperatures and lots of water. F.O.B. P.R.

Propagating cane. Approximate shipping weight, 900 lbs. per 1000 ft. Suggested shipment to U. S. by boat. Sold by the foot	16.00	150.00
2½ in. 6-12 in.	30.00	290.00
3 in. 12-15 in.	36.00	345.00

Marginata. Narrow leaves in dense terminal rosette. Dark glossy green edged reddish brown. Slow grower. F.O.B. P.R.

U.R.C., 8-10 in.	14.50	135.00
U.R.C., 10-15 in.	18.50	175.00

Eugene Andre. Propagating cane per ft. F.O.B. P.R.	20.00	185.00
Firebrand. Propagating cane per ft. F.O.B. P.R.	21.00	190.00
Virena. U.R.C., 6-10 in. F.O.B. P.R.	13.00	120.00

Indivisa. The popular plant for planting in vases. Delivery September through March. F.O.B. Wisc., Ohio, and Mass. Minimum order 100 plants.

2¼ in.	11.00	100.00
3 in.	20.00	195.00

DUSTY MILLER

We offer the cutting-propagated, fern-leaved variety. F.O.B. Ind. and Ohio. Available September to February. Minimum order 100 plants. 500 or more priced at 1000 rate.

	Per 100	Per 1000
R.C.	$ 5.50	$ 47.50
2¼ in.	11.00	100.00

Foliage Plants

FERN

We offer a very complete list of fern plants, both in flats and from pots. Write us if you are interested in specific varieties. The following two varieties are our biggest sellers because of their use in Poinsettia pans. F.O.B. New Jersey. Plants are transplanted and shipped in 14 x 20 in. flats containing 150 to 170 plants per flat. Available June through September. We offer a special 5% discount for orders totaling 10 or more flats.

Pteris tremula. Robust, fast growing with feathered grass-green fronds. Best for larger Poinsettia pans. **$7.00** per flat.

Pteris Wilsonii. Compact habit with shapely crested fronds. Best for smaller Poinsettia pans. **$7.00** per flat.

FICUS
(Rubber Plant)

We offer moss-rooted layered cuttings with 6 or more leaves.

	Per 100	Per 1000
Decora. The finest green-leaved Rubber Plant. **F.O.B. Louisiana and Florida.** Available spring, summer and fall. **$22.00** per 20	**$100.00**	.....
Doescheri. Leaves marked pale green and cream. Should be protected from full sun. F.O.B. Fla. and Louisiana. Available spring, summer and fall. See photo at right. Minimum order 25 plants	**45.00**	**400.00**
Elastica. The standard green-leaved Rubber Plant. Very tolerant of artificial heat and thrives in bright or subdued light. Minimum order 25 plants. F.O.B. Louisiana	**35.00**	**320.00**
Pandurata. Glossy green, large, wavy leaves. Upright grower. Requires minimum of 65° and shade. F.O.B. Florida. Minimum order, 25 plants	**80.00**	.....

GEOGENANTHUS UNDATA
(Seersucker Plant)

A very interesting new foliage plant. See picture at right. Leaves dark green with light stripes; under side purplish red. Foliage shows interesting "waffle" type indentations. Pot in very well drained soil—straight German Peat is fine. Thrives in very dark locations and SHOULD BE FED AND WATERED VERY SPARINGLY. Tolerates temperatures between 50 and 90°. We offer Rooted Cuttings at **$23.00** per 100; **$190.00** per 1000. Available throughout the year and shipped F.O.B. Florida. Minimum order, 100 plants.

IVY

	Per 100	Per 1000
English. Broad leaved. 2¼ in. Ready Oct. 15	**$ 8.00**	.....
Grape. Vitis Rhombifolia. 2¼ in.	**12.00**	**$110.00**
Large Leaf Variegated. 2¼ in.	**20.00**	.....
Self-Branching. 2¼ in.	**10.00**	.....

All above shipped F.O.B. Ohio. Minimum order, 100 plants.

MARANTA KERCHOVEANA

Flat oval leaves with chocolate blotches. Prefers warm, humid atmosphere.

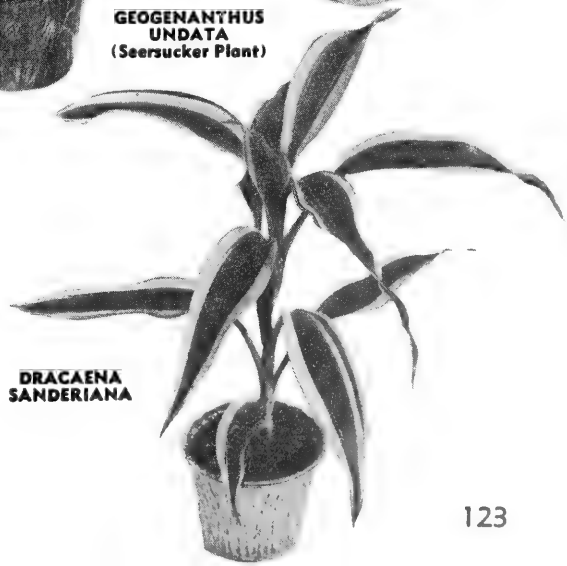
	Per 100	Per 1000
U.R.C. F.O.B. P.R.	**$ 7.00**	**$ 65.00**
R.C. 3-5 leaves. F.O.B. Fla. Minimum order 100 cuttings	**9.00**	**80.00**
2¼ in. 4-8 leaves. F.O.B. Fla. Minimum order, 100 plants	**16.00**	**150.00**

FICUS DOESCHERI

DICHORISANDRA REGINAE

DRACAENA GODSEFFIANA

GEOGENANTHUS UNDATA (Seersucker Plant)



DRACAENA SANDERIANA

Ball Decorative

PHILODENDRON PERTUSUM

Excellent in small dish gardens or in larger sizes for specimen work. F.O.B. Fla. Pictured at left below.

	Per 100	Per 1000
Seedlings. Minimum order, 500 plants.		**$ 45.00**
Transplants. Minimum order, 100 plants.	**$ 8.00**	**65.00**
2¼ in. 4-6 leaves. Minimum order, 100 plants	**16.00**	**150.00**

NEPHTHYTIS

Arrow-shaped leaves. Excellent for dish gardens. Older plants climb.

	Per 100	Per 1000
Green Gold. Leaves show whitish centers.		
R.C. 3-5 leaves. F.O.B. P.R. Approximate shipping weight, 60 lbs. per 1000. Pictured at left	**$ 5.75**	**$ 52.50**
R.C. 3-5 leaves. F.O.B. Fla. Minimum order, 100 plants	**7.00**	**60.00**
2 in. 2 plants per pot. F.O.B. P.R.	**14.25**	**135.00**
2¼ in. 4-7 leaves. F.O.B. Fla. Minimum order, 100 plants	**16.00**	**150.00**
Emerald Gem. Green, crinkled leaf. F.O.B. Fla.		
R.C. 3-5 leaves. Minimum order, 100 plants	**7.00**	**60.00**
2¼ in. 4-7 leaves. Minimum order, 100 plants	**11.00**	**100.00**
Wendlandii. R.C. 3-5 leaves. F.O.B. P.R. Approximate shipping weight 60 lbs. per 1000	**5.75**	**52.50**
Liberica. Unrooted propagating eyes. Dull green leaves. Tolerates shade well. Climbs rapidly. F.O.B. P.R.		**$ 6.00**
2¼ in. F.O.B. Ohio	**10.00**	

NEPHTHYTIS GREEN GOLD

PANDANUS VEITCHI

Fresh green, leathery, long, narrow leaves contrastingly striped white. Very tolerant of neglect. F.O.B. P.R.

	Per 100	Per 1000
8-15 in. Pot grown	**$18.00**	**$170.00**

NEANTHE BELLA PALM

PEPEROMIA

Variegata. Green leaves heavily variegated creamy yellow. Must be grown on dry side with shade from direct sun. See photo at left.		
U.R.C. 3-5 leaves. F.O.B. P.R.	**6.00**	**55.00**
R.C. 3-5 leaves. F.O.B. Fla. Minimum order, 100 plants	**11.00**	**100.00**
2¼ in. 5-8 leaves. F.O.B. Fla. or Ohio. Minimum order, 100 plants	**16.00**	**150.00**
Obtusifolia. Leathery, shiny green leaves. Must be grown on dry side with shade from direct sun.		
U.R.C. Tip cuttings. F.O.B. P.R. Approximate shipping weight 67 lbs. per 1000		**38.00**
R.C. 3-5 leaves. F.O.B. Fla. Minimum order, 100 cuttings	**7.00**	**60.00**
2¼ in. 5-8 leaves. F.O.B. Fla. or Ohio. Minimum order, 100 plants	**11.00**	**100.00**
Sandersi (Watermelon Plant). Pretty silver design on gray leaves. We offer 2¼ in. plants F.O.B. Ohio. Minimum order, 50 plants	**20.00**	

PEPEROMIA OBT. VARIEGATA

Emerald Ripple. Attractive rippled green foliage with small, upright flower stalks. An interesting addition to a house plant collection. See photo at left.
R.C. F.O.B. Calif. Minimum order 250 plants. **$80.00** per 1000.
2¼ in. $20.00 per 100.
F.O.B. Ohio. Available throughout the year. Minimum order, 50 plants.

PEPEROMIA EMERALD RIPPLE

Foliage Plants

PHILODENDRON

Philodendron is a Greek word roughly translated into "lover of trees." Native to the tropical regions of the world, most of the Philodendrons are found native as tree climbers. Hence many of them are excellent for totem pole work. Taking another tip from their native habitat, Philodendrons are at their best in filtered sunlight—not deep shade nor bright, direct sun. A soil mixture heavy in acid peat is ideal. Assuming a well-drained soil, Philodendrons enjoy lots of water—both atmospheric and in soil. However, many species are quite tolerant of hot, dry and dark indoor locations.

Cordatum. Undoubtedly our most widely grown house plant. Very tolerant of heavily shaded locations. For specialist growers we recommend our propagating eyes or started eyes as being excellent buys. For quicker turnover or the smaller retail grower, our offering of rooted cuttings and pot plants are ideal. Pictured at right.

	Per 1000
Propagating Vines. F.O.B. P.R. Approximate shipping weight, 30 lbs. per 1000 eyes	**$10.50**
Special price for lots of 5000 or more, **$9.50** per 1000 eyes.	
F.O.B. Fla.	**12.50**

Started Eyes. A REAL BUY! Started eyes are cuttings that have been in the propagating bed long enough for roots and growing eyes to start—a kind of half-rooted cutting. Because their roots are already started, they will start right out into rapid growth when potted. F.O.B. P.R. Approximate shipping weight, 25 lbs. per 1000.

In lots of 1000 to 10,000	**25.00**
In lots of 10,000 to 50,000	**22.50**
In lots of 50,000 or more	**20.00**

Rooted Cuttings. F.O.B. Fla.

2-3 Leaves.

EXTRA SELECT large leaved cuttings. Minimum order, 1000 cuttings	**45.00**
Regular Stock. In no sense are these culls. They are smaller leaved cuttings. Minimum order, 1000 cuttings	**40.00**

3-5 Leaves.

EXTRA SELECT large leaved cuttings	**65.00**
Special quantity price: **$62.50** per 1000 for orders of 5000 or more.	
Special price for smaller quantities: 250 for **$18.00;** 500 for **$35.00.**	
Regular Stock. Smaller-leaved than above	**52.50**
Special quantity price: **$50.00** per 1000 for orders of 5000 or more.	
Special price for smaller quantities: 250 for **$15.00;** 500 for **$27.50.**	

2¼ in.

	Per 100	Per 1000
EXTRA SELECT with larger leaves. Two plants per pot. Minimum order, 100 plants	**$14.50**	**$135.00**
Regular Stock. Smaller leaved. Minimum order 100 plants. Three plants per pot	**20.00**	**185.00**

Pertusum (Monstera deliciosa). The most widely grown of the large-leaved Philodendrons. Excellent for totem pole work. Too small a container, lack of water combined with excessively low or high temperatures will cause leaves to turn yellow. Pictured on opposite page.

U.R.C. 10-15 in. F.O.B. P.R.	**35.00**	**300.00**
3 in. F.O.B. Fla. Minimum order 25 plants	**55.00**	**500.00**
4 in. F.O.B. Fla. Minimum order 25 plants.	**80.00**	**750.00**

Hastatum. Large, arrow-shaped, leathery, bright green leaves. Fast-growing; excellent for totem poles. Happiest in a shaded location. Pictured above.

	Per 100	Per 1000
U.R.C. 12-15 in. F.O.B. P.R.	**$28.00**	**$260.00**
2¼ in. 3-5 leaves. F.O.B. P.R. Approximate shipping weight 500 lbs. per 1000	**28.00**	**270.00**
3 in. F.O.B. Fla. Minimum order 25 plants	**55.00**	**500.00**
4 in. F.O.B. Fla. Minimum order 25 plants.	**80.00**	**750.00**

Dubia. Deeply lobed leaves.

U.R.C. 8-12 in. F.O.B. P.R.	**20.00**	**180.00**
3 in. F.O.B. Fla Minimum order 25 plants.	**42.50**	**400.00**
4 in. F.O.B. Fla. Minimum order 25 plants.	**65.00**	**600.00**

Panduriforme. A good climber with "fiddleshaped" leaves. Readily stands low light intensities. Very tolerant of indoor conditions. Pictured above, right.

U.R.C. 6-10 in. F.O.B. P.R.	**13.00**	**115.00**
R.C. (Medium). F.O.B. Fla. Minimum order 100 plants	**16.00**	**132.50**
R.C. (Large). F.O.B. Fla. Minimum order, 100 plants	**19.50**	**160.00**
3 in. F.O.B. Fla. Minimum order, 25 plants.	**42.50**	.....

Mandianum. Similiar to Hastatum but leaves attractive reddish brown.

3 in. F.O.B. Fla. Minimum order, 25 plants.	**45.00**	.....

Selloum. Self-heading with large, deeply cut leaves. Stands bright sunlight and temperatures as low as 50°.

4 in. F.O.B. Fla. Minimum order, 25 plants.	**80.00**	**750.00**

Geo. J. Ball INC.

Foliage Plants

PILEA CADIEREI

(Aluminum Plant)

	Per 100	Per 1000
R.C. 4-8 leaves. F.O.B. Fla. Minimum order, 100 plants	$ 6.00	$ 55.00
2¼ in. F.O.B. Fla. or Ohio. Minimum order, 100 plants	16.00	150.00

Dwarf Aluminum Plant. A new, improved form with self-branching habit. Stays short and bushy. F.O.B. Ohio. Minimum order 100 plants per size.
R.C. **$13.00** per 100; **$105.00** per 1000.
2¼ in. **$21.00** per 100; **$185.00** per 1000.

POTHOS

Beautifully colored leaves make the Pothos a wonderful plant for small arrangements and dish gardens. One precaution—temperatures above 70° and loose, well-drained soil allowed to dry out between waterings is necessary. Pothos will rot in a cold, wet location.

Wilcoxi. A highly variegated sport of Pothos aureus. Green leaves variegated with yellow.		
Started Eyes. A REAL BUY! Started eyes are cuttings that have been in the propagating bed long enough for roots and growing eyes to start—a kind of half-rooted cutting. Because their roots are already started, they will start right out into rapid growth when potted. F.O.B. P.R. Approximate shipping weight, 30 lbs. per 1000.	.....	25.00
R.C. 3-5 leaves. F.O.B. Fla. Minimum order, 100 cuttings	7.00	60.00
2¼ in. 4-6 leaves. F.O.B. Fla. Minimum order, 100 plants	11.00	100.00
2½ in. 3 eyes. F.O.B. P.R. Approximate shipping weight, 180 lbs. per 1000.	18.00	160.00
Marble Queen. Green leaves variegated snowy white. Pictured above.		
Propagating Eyes. F.O.B. Fla. Minimum order 500 eyes	.....	26.00
Aerial Roots. 6-8 in. F.O.B. P.R.	8.00	70.00
R.C. 3-5 leaves. F.O.B. Fla. Minimum order 100 cuttings	11.00	100.00
2¼ in. F.O.B. Fla. Minimum order 100 plants.	21.00	200.00
2¼ in. 2 plants per pot. F.O.B. P.R.	17.00	150.00
Golden Pothos. Propagating Eyes. F.O.B. Fla. Minimum order, 1000 eyes	.....	16.00

SANSEVIERIA

About our most indestructible house plant. Withstands varying temperatures and dark corners. Should be watered moderately in the summer and not much during winter. You can honestly tell your customers that his Sansevieria will out-live him if properly watered!

Laurenti. Dark green leaves with light green cross bands and broad yellow margins. All following are rooted plants with 3 or more leaves. Minimum order, 100 of a size.

	F.O.B. Florida		F.O.B. Puerto Rico	
	Per 100	Per 1000	Per 100	Per 1000
4-6 in.	$13.50	$125.00	$10.00	$ 95.00
6-8 in.	13.50	125.00	11.00	100.00
8-12 in.	13.50	125.00	.....	.....
8-15 in.	.....	.....	12.00	110.00
12-15 in.	14.00	130.00	.....	.....
15-18 in.	14.00	130.00	.....	.....
18-20 in.	.....	.....	13.50	120.00
18-24 in.	14.00	130.00	.....	.....

POTHOS MARBLE QUEEN

SANSEVIERIA, Continued

Zeylanica. Same as Laurenti but no yellow margins. Minimum order 100 per size.

	Per 100	Per 1000
4-6 in. F.O.B. Fla.	$ 8.00	$ 70.00
6-8 in. F.O.B. Fla.	8.00	70.00
6-10 in F.O.B. P.R.	6.00	52.50
8-12 in. F.O.B. Fla.	8.00	70.00
10-15 in. F.O.B. P.R.	7.50	62.50
12-15 in. F.O.B. Fla.	8.00	70.00

Hahnii. An attractive short, rosette type. Rooted plants F.O.B. Fla. Minimum order, 100 plants of a size.

Small Rosettes	7.00	60.00
Medium Rosettes	10.00	90.00
Large Rosettes	14.00	120.00
2¼ in. F.O.B. Ohio	16.00	.....

Golden Hahnii (Pat. 1224). A striking new break in this dwarf Hahnii type. Leaves bordered yellow. Markings variable. F.O.B. Pittsburgh. Minimum order, 25 plants of each size.
Bare root for 2½ in., 35c each.
Bare root for 3 in., 50c each.
2½ in. size, 50c each.
3 in. size, 75c each.
4 in. size, $1.00 each.

Silver Hahnii. (Pat. 1220). Leaves an attractive light, silvery green. F.O.B. Pittsburgh. Minimum order, 50 plants of each size.
Bare root for 2¼ in. $12.50 per 100; **$100.00** per 1000.
Bare root for 2½ in. $15.00 per 100; **$125.00** per 1000.
Bare root for 3 in. $20.00 per 100; **$175.00** per 1000.
2¼ in. size. $20.00 per 100.
3 in. size. $35.00 per 100.

SCHEFFLERA actinophylla

Large compound leaves with 6 to 9 leaflets. Well suited to dish garden work in smaller sizes and also good in large specimens. Plant in well-drained soil and do not overwater. Temperatures of 65° or over and protection from direct sun are necessary.

	Per 100	Per 1000
Seedlings. Available in midwinter. F.O.B. Fla. Minimum order, 250 plants	.....	$ 40.00
Transplants—Medium. Available October, through July. F.O.B. Fla. Minimum order, 250 plants	.....	55.00
Transplants—Large. Available throughout the year. F.O.B. Fla. Minimum order, 100 plants	$ 9.00	65.00

VINCA VINES

(Variegated)

	Per 100	Per 1000
2¼ in. Minimum order, 100 plants. Available November to March	$11.00	$100.00
R.C. Available October to February. Minimum order 250	4.50	42.50

Vinca Vines F.O.B. Ill., Ind., and Mass. 500 or more priced at 1000 rate.

Miscellaneous Plants

AGERATUM

We offer rooted cuttings and 2¼'s of the following well-known cutting propagated varieties. Available September to March. Shipped F.O.B. Illinois, Indiana, Ohio, Pennsylvania, and Massachusetts.

	Rooted Cuttings Per 100	Per 1000
Blue Boy	**$3.00**	**$26.00**
Devon Blue. Bushy, slightly taller than Imp. Riverside	**3.50**	**30.00**
Imp. Riverside. Dwarf blue	**3.00**	**26.00**
New Masterpiece. Blue	**3.00**	**26.00**
New Pink. Dwarf	**3.50**	**30.00**
Purple Beauty. Tall	**3.00**	**26.00**
White. Dwarf	**3.50**	**30.00**

2¼ inch plants of the above varieties: **$10.00** per 100; **$90.00** per 1000; 500 plants at 1000 rate. Minimum 100 of a variety.

AZALEAS

We carry a complete line of both Dormant and lining-out stock Azaleas. Space doesn't permit a complete listing from all our sources. Our list includes dormant plants shipped from West Virginia, California, Oregon, Michigan, Virginia, and New Jersey. We offer a complete list of growing-on liners from New Jersey, New York, and Alabama.

Our Azaleas are all grown by the country's leading specialists and our prices are competitive. We will be happy to send you our complete Azalea list or quote on your requirements.

BEGONIAS

See page 112.

BLEEDING HEART

(Dicentra Spectabilis)

We offer field grown clumps shipped F.O.B. Pennsylvania. Minimum order 25 clumps. Available October 15 to April 1.

3-5 eyes, 40c ea. 5-8 eyes, 50c ea. 8 eyes and up, 62½c ea.

BROWALLIA

Speciosa Major. The attractive violet-blue flowered pot plant. 2¼-inch plants, delivery in November. F.O.B. Ohio. **$10.00** per 100.

CALCEOLARIA

We offer plants of both the seedling and cutting propagated types. We suggest potting either cuttings or 2¼'s directly into 5 inch pots. Keep plants on dry side and give cheesecloth shade during spring and summer. Temperature should be 48° to 50°. All plants shipped F.O.B. New York. 2¼'s available September to December.

VARIETIES GROWN FROM SEED for EASTER FLOWERING:

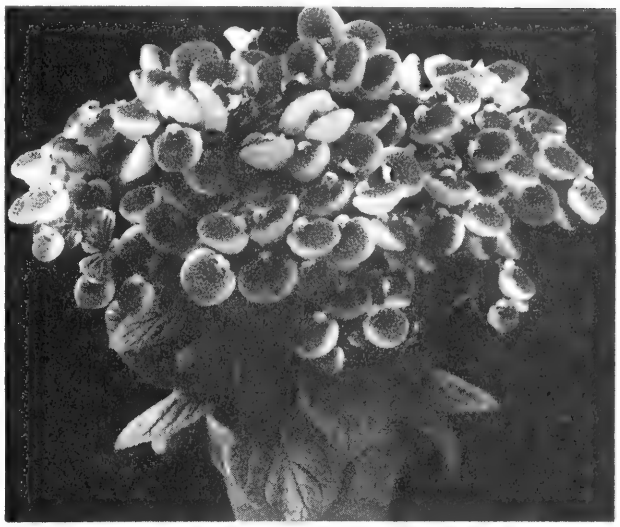
2¼ inch plants **$20.00** per 100.

Multiflora Nana. Excellent strain.
Multiflora Nana, Gilbert's Strain.
Triumph. Shades of yellow, orange and red.
Mixture of seedling varieties (not labeled), **$18.00** per 100.

VARIETIES GROWN FROM CUTTINGS FOR MOTHER'S DAY FLOWERING:

2¼ inch plants **$30.00** per 100.

Greater New York.
Pure Flame. Red.
Stewart II. Yellow.
Imp. Perfection. Yellow, orange, and amber.
Golden Talisman. Amber.
Cherry Queen. Pink.
Mary Louise. Red.
Pink Perfection. Pink.
Rosacker's Brilliant. Red.
Suzanne. Yellow.



SPECIAL CALCEOLARIA ASSORTMENT.

Special Calceolaria assortment for the retail grower who wants a collection of all the principal colors available in both the cutting and seedling Calceolarias. All 2¼'s: 50 plants of the Mother's Day cutting varieties and 50 plants of the seedling varieties. Available September to December. Shipped F.O.B. New York: **Assortment** (100 2¼ inch plants) **$20.00.**

CARNATIONS

See page 98.

CINERARIA

Order our 2 inch banded plants for shipment in October or November for Easter plants finished in 5 inch pots. 48° to 50° is ideal for Cinerarias.

Siter's Rainbow Strain. Large heads, medium sized white-eyed flowers.

Cremer's Prize Strain. Extra large heads of small flowers. Small leaves.

Prices above 2 varieties, each: **$12.00** per 100; **$100.00** per 1000.

Cinerarias shipped in our special Ball-Pak, F.O.B. Illinois. Minimum order 100 plants, in multiples of 50 plants.

CYCLAMEN

We supply excellent plants from specialist producers. Depending on your space requirements, buy 2¼-inch in late spring, 3-inch during summer or 4-inch in August or September. Cyclamen flower when they become pot-bound. A final shift in mid-August will flower in November or December; a final shift in early September will flower for Christmas, etc. Pot in a mixture of ¼ non-acid peat, ¼ leaf mold and ½ soil. Mite are best controlled by Parathion wettable powder plus spreader and/or sodium selenate. Our plants are sold only in a well-balanced mixture of the popular varieties and colors. Shipped F.O.B. Illinois, Iowa, Michigan, New York and Wisconsin. 250 plants of 2¼-inch and 3-inch sizes at the thousand rate.

2¼ inch plants available April to June. **$25.00** per 100; **$220.00** per 1000. Minimum order, 100 plants.

3 inch plants available June and July. **$38.00** per 100; **$360.00** per 1000. Minimum order, 50 plants.

4 inch plants supplied during August and September. **$65.00** per 100. Minimum order, 25 plants.

MISCELLANEOUS PLANTS, **Continued**

FOLIAGE PLANTS

See Page 119.

FUCHSIA

	Rooted Cuttings Per 100	Rooted Cuttings Per 1000	2¼-in. Plants Per 100	2¼-in. Plants Per 1000
Little Beauty. Double. Red petals with purple bell. Dwarf	$8.00	$78.50	$14.00	$135.00
Hollydale. Double. Rose petal with violet bell	7.00	65.00	13.00	125.00
Winston Churchill. Double rose petal with violet bell	7.00	65.00	13.00	125.00
Bagdad. Double	6.75	62.50	12.50	120.00
Lord Byron. Double dwarf red	6.75	62.50	.....	.....
Black Prince. Tall pink.	6.75	62.50	12.50	120.00
Pride of Orion. Tall double red with white bell	6.75	62.50	12.50	120.00
Giant Pink. Double tall pink	6.75	62.50	12.50	120.00

500 of above cuttings or 2¼-inch plants billed at the 1000 rate. Minimum order 100 per variety. Shipped F.O.B. Pennsylvania, Indiana and Mass.

FUNKIA

Variegata. An attractive pot plant with silvery-white variegated leaves. Lilac, bell-shaped flowers. 2¼-inch plants shipped from Ohio during the spring. **$15.00** per 100.

GERANIUMS

See page 110.

GARDENIA

Vetchi. The variety commonly grown as a pot plant. 2¼-inch plants for growing on. Shipped in the fall from Ohio. **$20.00** per 100.

CYCLAMEN

All our Gloxinia seedlings are grown in bands and shipped in Ball-Pak.

GLOXINIAS

Grow Gloxinias from Ball Seedlings!

Modern seedling strains of Gloxinias are fast gaining favor as a quick pot plant crop. The newer seedling varieties feature brilliant colors and small, leathery leaves that stand packing and shipping well.

A few cultural pointers:

1. Pot seedlings immediately upon arrival directly into 5 or 6 inch pots.
2. Use a sterilized mixture of ½ peat moss or leaf mold and ½ sandy loam.
3. Water frequently and lightly. Never allow to completely dry out. Never wet foliage. Keep atmospheric humidity high.
4. Temperatures of 64 to 68° are ideal the year round.
5. Shade with cheese cloth during bright summer days.
6. Feed with a weak solution of ammonium sulfate twice a month.

BALL GLOXINIA SEEDLINGS WILL FLOWER IN 3 TO 4 MONTHS FROM PLANTING. THEY CAN BE GROWN THE YEAR ROUND. TRY THEM!

All our Gloxinias are shipped from a specialist grower in Florida. Plants shipped in 2 inch Ball Plant Bands. Price on all varieties and mixture: **$20.00** per 100; **$180.00** per 1000. Minimum order 100 plants. 250 or more plants billed at the thousand rate. Particularly on separate color varieties, we would like to have 30 days notice for shipment. These are all seedling strains —don't confuse them with varieties propagated and sold as tubers.

SPECIAL FORMULA MIXTURE

Made up specially for the smaller grower who needs a hundred or more Gloxinias and doesn't want to bother ordering by individual varieties. This mixture consists of nearly ½ solid red varieties with lesser amounts of solid blues and purples, red-and-white and blue-and-white combinations with a few of the more unusual shades and speckled types. This is a formula mixture containing only first class varieties.

Red Velvet. Our finest cardinal red. Very strong grower, producing many flowers.

Royal Velvet. Deep purple. Strong grower.

New Cherry Belle. Deep cherry red with white border. Produces large plants.

Pink Pearl. Soft rose red with white center.

Fuchsia Queen. Rich shades of reddish purple or wine color. Strong grower.

Snow Bird. Gigantic pure white, very durable flowers. Very strong grower.

Purple Cloud. Rich purple with white center.

Improved Colossal Hybrids. A particularly large flowered strain, varying in color from soft pink to red and wine colors. Beautiful soft foliage that doesn't break easily.

GYNURA

Aurantiaca, or Velvet Plant. A very attractive novelty pot plant found native in Java. Grows 1 to 2 ft. high in pots. Heavy succulent leaves covered with violet or purple hairs. Clusters of flowers are yellow or orange. A real novelty. 2¼-inch plants shipped from Ohio during the fall. **$15.00** per 100.

GYPSOPHILA

Bristol Fairy. The popular perennial "Gyp." We offer 2¼-inch plants for spring delivery from Ohio. **$22.00** per 100 or **$200.00** per 1000. One-year field grown stock, October delivery from Ohio. **$35.00** per 100.

HYDRANGEAS

See page 111.

LANTANA

We offer Lantana 2¼'s in the following varieties for shipment October to May.

Craigi. Deep red shading to yellow.
Delicatissima. Yellow shading to pink.
Dwarf Buckeye. Red shading to yellow.
Golden King. Lemon yellow.
Jacob Schultz. Red.
Lady Olivia. Yellow shading to pink.
La Pleur d'Or. Burnt orange.
Mary Kathryn. Light lavender.
Michael Schmidt. Red shading to yellow.
Radiation. Red, orange and yellow center.
Sunset. Yellow and red.
Sensation. Pink shading to yellow.
Snow White. White.
Southern. Yellow shading to buff. Dwarf.
Tethys. Cream shading to canary yellow.
Prices on above varieties: **$11.00** per 100, **$100.00** per 1000. Minimum order, 100 plants. Shipped F.O.B. Pennsylvania and Ohio, where available.

PACHYSANDRA

We offer the new **Variegated** form that makes an excellent dish garden subject. 2¼-inch plants, **$18.00** per 100, **$150.00** per 1000. Fall delivery only. F.O.B. Virginia.

PANSY

All our Pansy plants are grown by specialists from originator's seed. Delivery late September through early November.

Steele's Jumbo Mixture. $13.50 per 1000.
Steele's "400" Super Swiss Mixed. $13.50 per 1000.
Swiss Roggli Giants. $16.50 per 1000.
Minimum order, 1000 of a variety. Shipped F.O.B. Ohio and Illinois.

PERENNIALS

Write for prices on our complete list of Perennials.

ALL-DOUBLE PETUNIAS

We offer the following varieties available in 2 inch plant bands and shipped in Ball-Pak. Available December through April.

Gaiety. Dwarf blotched rose and white.
Allegro. Bright salmon.
Sonata. Pure white.
Blue Moon. Purple.
Rose of Canada. Bright medium rose.
Ball All-Double Mixture
Canadian All-Double Mixture.
Assorted varieties.
Prices above, each: **$12.00** per 100; **$100.00** per 1000. 250 plants billed at 1000 price. Minimum order, 100 plants, 25 of a variety. Please order in multiples of 50. Shipped F.O.B. Ohio.

HARDY PHLOX

From 2¼ inch pots. Ready April 1. The best varieties of most recent introductions.

American Beauty. White.
Adonia. Fuchsia red.
Caroline Vandenburg. Lavender blue.
Elaine. Orange crimson.
Esquire. Deep rose red.
Pink Charm. Clear pink.
Pinkette. Pastel pink.
Red Bird. Bright crimson.
Starlight. Violet red.
World Peace. Pure white.

Prices above, each: **$10.00** per 100; **$90.00** per 1000. Minimum order 100 plants. F.O.B. Ohio.

PHLOX SUBULATA

(**Moss or Mountain Pink**). 4 inch. May delivery.
Field grown plants shipped from Michigan. Minimum order 100 plants, 10 of a variety.

	Per 10	Per 100
Alba. Pure white flowers	**$2.00**	**$15.00**
Alexander's Pink. Beautiful bright rose with conspicuous red eye	**2.25**	**17.50**
Atropurpurea. Deep carmine red	**2.00**	**15.00**
Blue Hill. Attractive, light blue flowers in spring and fall. Compact growing habit	**2.25**	**17.50**
Crimson Beauty. An improved Atropurpurea. More vigorous and freer flowering	**2.25**	**17.50**
Emerald Cushion Pink. Compact foliage, long flowering habit. Large pink flowers	**2.25**	**17.50**
Lilacina. Blue variety	**2.00**	**15.00**
Rosea. Pink variety	**2.00**	**15.00**
Vivid. Bright pink with darker eye. Very lovely	**3.00**	**25.00**
White Delight. The purest white. Bright green foliage and large flowers	**2.25**	**17.50**

POINSETTIAS

Stock Plants

New Ecke Pink. Long bracts similar to Oak Leaf.
Barbara Ecke Supreme. Most popular variety for central and northern U. S. Sold under patent restrictions.
Indianapolis Red. Particularly fine for southern growers.
Ecke White.

Prices on above 4 varieties, per 100 plants.

Super Jumbo	Jumbo	No. 1	No. 2	No. 3	No. 4
$180.00	$150.00	$120.00	$90.00	$60.00	$40.00

Imp. Albert Ecke **Mrs. Paul Ecke** **Ruth Ecke**
Oak Leaf **Pink**

Prices on above 5 varieties, per 100 plants:

Super Jumbo	Jumbo	No. 1	No. 2	No. 3	No. 4
$150.00	$125.00	$100.00	$80.00	$60.00	$35.00

Double Henriette Ecke **St. Louis**

Prices on above 2 varieties, per 100 plants:

Super Jumbo	Jumbo	No. 1	No. 2	No. 3	No. 4
$135.00	$110.00	$85.00	$65.00	$45.00	$25.00

The above prices are f.o.b. eastern points of distribution, c/o Railway Express Co. All No. 4 plants are shipped f.o.b. Encinitas, Calif. We will add 10% packing charge on all orders received after Jan. 1. All orders must be final by Feb. 1.

The following table shows an approximate number of cuttings that may be expected from various sizes of stock plants. Allow ⅓ more plants for the variety Indianapolis Red.

SUPER JUMBO PLANTS SHOULD PRODUCE 70 TO 90 CUTTINGS.
JUMBO PLANTS SHOULD PRODUCE 50 TO 70 CUTTINGS.
NO. 1 PLANTS SHOULD PRODUCE 40 TO 50 CUTTINGS.
NO. 2 PLANTS SHOULD PRODUCE 25 TO 40 CUTTINGS.
NO. 3 PLANTS SHOULD PRODUCE 10 TO 25 CUTTINGS.

SEE NEXT PAGE FOR 2¼ INCH POINSETTIA PLANTS.

POINSETTIAS, Continued

2¼-INCH PLANTS

For the convenience of our customers who do not have facilities for producing their own Poinsettia cuttings, we offer the following varieties in 2¼-inch plants. These plants are of excellent quality produced by specialist growers.

	Per 100	Per 1000
Barbara Ecke Supreme	$25.00	$225.00
Improved Albert Ecke	21.00	200.00
Indianapolis Red	24.00	220.00
Ecke White	21.00	200.00
Ecke Pink	21.00	200.00

Available August through October 1958. Shipped F.O.B. Illinois, Michigan, Indiana, Pennsylvania, Texas, Oklahoma, and New York, where available. Minimum order 100 plants. 250 or more plants of a variety billed at 1000 rate. Above prices were in effect for the 1957 season, and are subject to change.

PRIMULA

MALACOIDES. Our plants are 2¼-inch size shipped September to January.

Glory of Riverside Imp. Salmon rose.

New Baby. Dark lavender.

New Giant. Pink with yellow center.

New Red. Bright red. Doesn't turn dark.

$12.00 per 100; **$110.00** per 1000. Minimum order 100 plants in multiples of 50, 25 plants of a variety. Shipped F.O.B. Illinois.

OBCONICA. 2¼-inch plants shipped from June to December.

***Fasbender's Red.** Large deep red.

Mohnstein's Red. Popular deep red.

***Mueller's Berlin Rose.** Soft rose.

Friesdorfer. Salmon.

***Alba.** White.

***Sky Blue.**

$12.00 per 100; **$110.00** per 1000. Minimum order 100 plants in multiples of 50; 25 of a variety. Shipped F.O.B. New Jersey and Ohio. Those starred (*) are available from Texas September 1 and shipped in Jiffy-Pots.

ROSES

See page 113.

SAINTPAULIA

(African Violets)

One of our most popular house plants. We offer 2¼-inch plants of the following varieties. Available during the spring and fall. F.O.B. Ohio. Minimum order 50 plants.

	Per 100
Blue Peach	$35.00
Double Neptune. Blue	25.00
Double Pink Cushion	35.00
Double Sailor Girl	35.00
Double White Cushion	35.00
Lady Geneva	25.00
Midnight Lady. Double blue	25.00
Orcheva	35.00
Pink Cheer	25.00
Red Wing	35.00
Red Man. Single	35.00
Snow Prince	25.00

SNAPDRAGONS

Have trouble germinating Snap seed during the hot summer months? Buy our 2-inch banded plants. Our plants are produced by specialists from Orig. F_1 Hybrid Seed. Our Ball-Pak method of shipping assures plants arriving in tip-top shape.

For an early January crop grown on raised beds at 50°, plant 2-inch banded plants October 5 for an unpinched crop or September 5 for a pinched crop. For an early March crop plant 2-inch banded plants November 10 for an unpinched crop, or October 10 for a pinched crop. For early May flowering, plant 2-inch banded plants February 1 for an unpinched crop or January 1st for a pinched crop. All the following varieties except Hercules and Golden Spike we recommend for flowering from January on. Hercules and Golden Spike are best flowered from March on. Please specify whether you want your plants pinched or unpinched.

Bridesmaid. Medium rose.

Flower Girl. Medium pink.

Pink Ice. Medium rose, white lip.

Navajo. Best red.

War Admiral. Good early yellow.

Gallant Fox. Deep orange bronze.

Twenty Grand. Ivory white.

Libby. Dark rose.

Christina. Medium light pink.

Hercules. Medium pink.

Golden Spike. Golden yellow.

Snowman. Pure white.

Lavender Lady. Deep rosy lavender.

Shipped F.O.B. Illinois or Ohio. Minimum order, 100 plants, 25 of a variety. Please order in multiples of 50 plants. 250 plants billed at the thousand rate. Available August through March.

Prices above Snapdragon plants, each: **$8.00** per 100; **$65.00** per 1000.

VERBENA

Strong Rooted Cuttings

	Per 100	Per 1000
Candystick. Red and white	$4.50	$40.00
Schlosser's Pride. Dark red	3.50	30.00
True Beauty of Oxford. Cerise	3.50	30.00
True Beauty of Oxford. Pink	3.50	30.00
True Beauty of Oxford. Lavender	3.50	30.00
True Beauty of Oxford. Scarlet	3.50	30.00
True Mayflower. Light pink	3.50	30.00
Royal Purple. Purple with white eye	3.50	30.00
Pure White.	3.50	30.00

Strong 2¼-Inch on all above Varieties
$8.00 per 100, **$75.00** per 1000.

October to March delivery, F.O.B. Illinois. Orders for 500 or more at the 1000 rate.

jiffypot jiffypot jiffypot jiffypot jiffypot

JIFFY-POTS TO INCREASE YOUR PROFITS

This remarkable molded pot is constructed from long-fiber peat and wood fiber with soluble fertilizer added. The roots grow right through the walls.

CHECK THESE POINTS:

Faster Growth—steady and unchecked in this ideal container.
Heavier Growth—thicker stems, more dense foliage, better flowers.
Time Saving—faster growth means later propagation.
Space Saving—start new crop in Jiffies while old one cuts out.
No-Check Transplanting—uninterrupted growth.
Labor Saving—no pots to wash, sterilize, or store for re-use.
Meets Emergencies—hold plants in Jiffies until bench space clears.
Smart Merchandising—the "do it yourself" way.

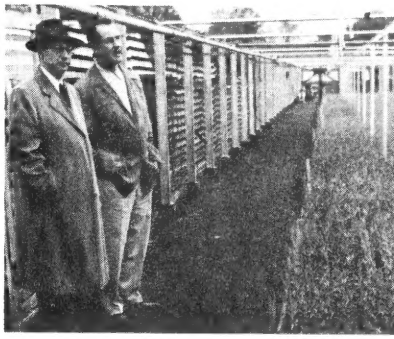
CUT FLOWER CROPS

CARNATIONS: Many Carnation growers throughout the country are using **Jiffy-Pots** extensively for potting their cuttings. The Joseph H. Hill Co. at Richmond, Ind., potted 150,000 cuttings in **Jiffy-Pots.** Dick Mikesell, vice-president of the Hill Co., wrote us, saying: "We found we were expending 97½ more man-hours for every 25,000 cuttings planted in clay pots than were necessary in using **Jiffy-Pots.** Once in the **Jiffy-Pots** the plants are never disturbed and consequently the comparative growth over the ones in clay pots is quite noticeable."

CHRYSANTHEMUMS: Cuttings can be potted in **Jiffy-Pots** and grown pot-to-pot for three or four weeks in much less space than required when benched. Then the **Jiffy-Potted** Mums are benched, pot and all, with the usual spacing. In year-round Mum programs some growers have gained additional production by this method. **Garden varieties** of Mums are being grown nicely in 3-inch **Jiffy-Pots.**

SNAPS: In year round Snap programs **Jiffy-Pots** enable growers to schedule three full crops a year. Seedlings grow just as fast in **Jiffy-Pots** as if they were direct benched, and there is **no check** at any time—they are benched pot and all after 4 to 6 weeks in the **Jiffies.** The 4 to 6 weeks is saved for a flowering, income-producing crop.

ASTERS: Growers who have replaced other containers with **Jiffy-Pots** in their Aster program report **greatly increased growth.** Plants grow faster and heavier, suffer no check at benching and produce premium flowers.



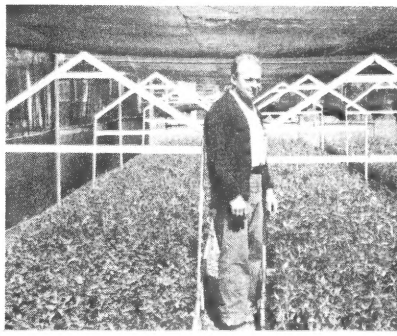
Jiffy-Potted Carnations in the Joseph H. Hill range, Richmond, Indiana. Jiffy-Pots pay for themselves here just by saving the labor of storing pots for re-use. Dick Mikesell of Hills, left, and Monty Wright of Geo. J. Ball, Inc., look over Carnations in 3-inch Jiffy-Pots ready for benching.

POT PLANTS

GERANIUMS: Growth is so rapid that two weeks can be cut from midseason and late propagations; even more from early fall schedules.

HYDRANGEAS: from rooted cuttings to 2¼ in. **Jiffies** to 5 in. finishing pots—this fast cycle is used by several Hydrangea growers.

POINSETTIAS: Fast growth in **Jiffy-Pots** enables later propagation and extends the cutting season—makes for a faster crop all around. Plants hold lower foliage well, keep dark green color better.



Willard Hartzell, Dayton, Ohio grower, in his Saran Cloth house of Snaps. Schedule: Sow February 14; Jiffy-Pot March 10 in 2¼-inch Jiffies; bench late April 4 x 4 in.; grow single stem; cut out in time to bench cloth house Mums.

PRICES PREPAID ON 150 LBS. OR MORE

2¼-Inch

Quantity	Per 1000
3,000 to 18,000 (3,000, **$21.75**)	**$7.25**
21,000 to 72,000	**6.75**
75,000 up	**6.25**

Sold in cases of 3,000. Minimum order 3,000, 35 lbs. per case.

3-Inch

Quantity	Per 1000
1,500 to 9,000 (1,500, **$19.88**)	**$13.25**
10,500 to 49,500	**12.25**
51,000 up	**11.00**

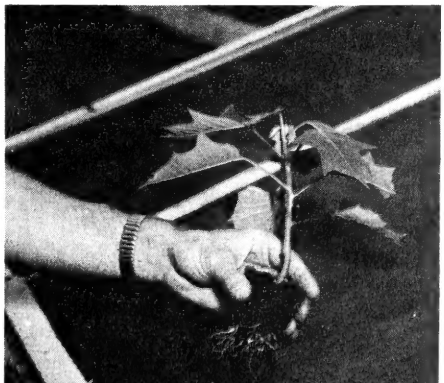
Sold in cases of 1,500. Minimum order 1,500, 35 lbs. per case.

Prices NET PREPAID in lots of 150 lbs. or more anywhere in the continental United States. Otherwise, F.O.B. West Chicago; Bayonne, N. J.; Allentown, Pa.; Toledo, Ohio; Houston, Tex.; Santa Paula, Calif.; San Francisco, Calif.; and Portland, Ore.

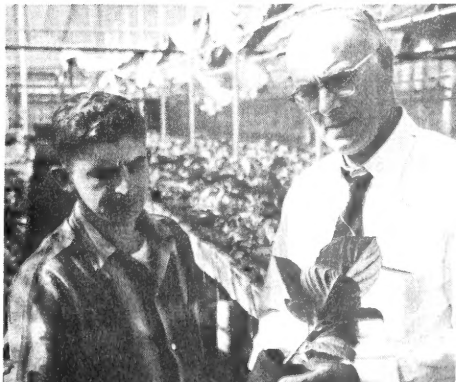
NOTE. Jiffy-Pots may be combined with Market-Pak orders to make up the minimum weight of 150 lbs. to qualify for PREPAID shipment, provided entire order calls for shipment at one time.

Jiffy-Pots can "save" Mum cuttings when bench space is tight. Hold cuttings three weeks in Jiffies with no slowdown of growth. Breaks are as good as direct benched cuttings.

Poinsettia in 2¼-inch Jiffy-Pot ready for panning at Morgan's Flowers, Elgin, Ill. Roots popped through near bottom where "Jiffy" was plunged in gravel, will penetrate everywhere when pot is in moist soil. Growth stocky, no leaf drop.



Dinser Flowers, Royal Oak, Michigan, grow Poinsettias and Hydrangeas in Jiffy-Pots with complete satisfaction. Pictured is Jimmy Dinser, left, and Si Randolph of Geo. J. Ball, Inc.



Geo. J. Ball INC.

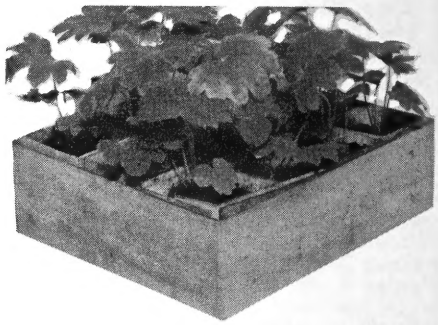
Ball Veneer Plant Bands and PlanTrays

for Bedding Plants . . . Chrysanthemums . . . Perennials Nursery Stock . . . Carnations . . . Vegetables

PLANT BAND PRICES

Per 1000 in quantities as shown below

Size	Shipping Units of	Weight Per 1000	0-9,000	10,000-24,000	25,000-49,000	50,000-Up
1¾x1¾x2	2,000	17 lbs.	**$6.20**	**$5.80**	**$5.40**	**$5.20**
1¾x1¾x2½	2,000	18 lbs.	**6.35**	**5.95**	**5.55**	**5.30**
2x2x2	2,000	19 lbs.	**6.35**	**5.95**	**5.55**	**5.30**
2x2x2½	2,000	20 lbs.	**6.45**	**6.05**	**5.65**	**5.40**
2x2x3	2,000	21 lbs.	**6.95**	**6.50**	**6.10**	**5.80**
2½x2½x2½	2,000	22 lbs.	**6.95**	**6.50**	**6.10**	**5.80**
2½x2½x3	2,000	23 lbs.	**7.45**	**6.95**	**6.50**	**6.20**
3x3x3	1,000	33 lbs.	**7.85**	**7.35**	**6.85**	**6.60**
3x3x4	1,000	45 lbs.	**8.20**	**7.70**	**7.20**	**6.80**
4x4x3	1,000	45 lbs.	**8.20**	**7.70**	**7.20**	**6.80**
4x4x4	1,000	48 lbs.	**9.20**	**8.70**	**8.10**	**7.80**



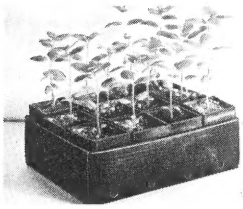
Delphinium—Veneer Plant Bands and PlanTrays are especially nice for perennials.

PLANTRAY PRICES

All Prices Net, F.O.B. our warehouse in West Chicago, Ill. **Per 1000 in quantities as shown below**

SAMPLES ON REQUEST

Size	Dimensions	Shipping Units of	Weight Per 1000	0-875	1000-2375	2500-Up
No. 1-X	(5⅞x7¾x2½.....holds 12 1¾x2½ bands)	125	200 lbs.	**$60.00**	**$56.55**	**$53.00**
No. 2-X	(6½x8½x2½.....holds 12 2x2½ bands)	125	240 lbs.	**65.40**	**61.60**	**57.75**
No. 3-X	(8⅛x10⅝x2½.....holds 12 2½x2½ bands)	125	288 lbs.	**72.50**	**68.25**	**63.95**
No. 4-X	(9⅝x12½x2½.....holds 12 3x3 bands)	125	320 lbs.	**79.50**	**74.90**	**70.00**
No. 1-SX	(9⅜x9⅜x2.....holds 25 1¾x2 bands)	125	288 lbs.	**72.50**	**68.25**	**63.95**
No. 2-SX	(10½x10½x2.....holds 25 2x2 bands)	125	320 lbs.	**79.50**	**74.90**	**70.00**
No. 3-SX	(13x13x2½.....holds 25 2½x3 bands)	125	400 lbs.	**99.50**	**95.50**	**91.25**



BIRD VITA-BANDS

VITA-BAND 10, nutrient-treated, for growing periods of 8 to 10 weeks.

VITA-BAND D, nutrient-treated, disintegrates in the soil after planting band and all.

VITA-BAND H, nutrient-treated, for extra long growing periods.

NET F.O.B. WEST CHICAGO, ILL. AND EAST WALPOLE, MASS.

VITA-BAND	1½x1½ x2½	1¾x1¾ x2½	2x2x2½	2x2x3	2½x2½x3	3x3x3	4x4x3	4x4x4
10	**$4.70** per 1000 2000 per case (33 lbs.)	**$5.00** per 1000 2000 per case (38 lbs.)	**$5.25** per 1000 2000 per case (42 lbs.)	**$5.75** per 1000 2000 per case (51 lbs.)	**$6.25** per 1000 2000 per case (63 lbs.)	**$6.90** per 1000 1000 per case (37 lbs.)	**$9.00** per 1000 1000 per case (50 lbs.)	**$11.25** per 1000 500 per case (33 lbs.)
D	**$4.85** per 1000 2000 per case (18 lbs.)	**$5.15** per 1000 2000 per case (21 lbs.)	**$5.35** per 1000 2000 per case (23 lbs.)	**$6.05** per 1000 2000 per case (28 lbs.)	**$6.30** per 1000 2000 per case (34 lbs.)	**$7.05** per 1000 2000 per case (40 lbs.)	**$9.25** per 1000 1000 per case (27 lbs.)	**$11.60** per 1000 1000 per case (35 lbs.)
H		**$6.10** per 1000 1000 per case (26 lbs.)	**$6.45** per 1000 1000 per case (30 lbs.)	**$7.55** per 1000 1000 per case (36 lbs.)	**$8.10** per 1000 1000 per case (44 lbs.)	**$8.50** per 1000 1000 per case (52 lbs.)	**$10.45** per 1000 500 per case (35 lbs.)	**$12.90** per 1000 500 per case (46 lbs.)

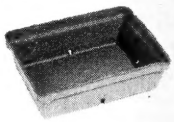
SOLD IN CASE LOTS ONLY

BIRD TOM THUMB FLATS

Combination 1000 Flats 12,000 Vita-Band 10 Per 1000 Sets		Sold in Units of 500 Sets only	Tom Thumb Flats Per 1000	Per 1000
Size #1 $96.80	Size #2 $106.70		Size #1 $44.70	Size #2 $49.60
			Sold in cases of 250	

Size No. 1 holds 12—1¾ x 2½ bands. **Size No. 2 holds 12—2 x 2½ bands.**

MARKET-PAKS



This popular pack for 12 bedding plants grown from seed is also used successfully for 6 Garden Mums or 6 Geraniums grown from cuttings. Model 42: size 5½x7½x2⅜ in. **Other sizes available.**

SEND FOR FREE SAMPLES

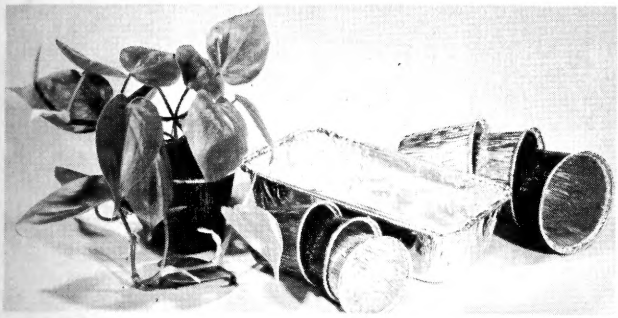
PRICES PREPAID ON ORDERS OF 150 LBS. OR MORE

Quantity	Per 1000
200 to 800 (200, **$9.60**)	**$48.00**
1,000 to 9,800	**44.00**
10,000 to 49,800	**40.00**
50,000 up	**36.00**

200 per case (20 lbs.)

Prepaid East of Rockies only.

May be combined with Jiffy-Pots orders to make 150 lbs. provided entire order calls for shipment at one time. Otherwise, F.O.B. West Chicago; Bayonne, N. J.; Allentown, Pa.; and Toledo, Ohio.



*ALUMIPOTS

THE MODERN WAY TO SELL PLANTS!

Grow Top-Quality Plants in Bright Attractive Packages

Light Weight • Easy to Store • Unbreakable
Long Lasting • Less Watering • Save Labor

Clean and Disease Free

Broad-Based Pots for Stability

A growing-selling container—no need to repot or dress up for selling

USED FOR: Foliage plants. Blooming plants such as African Violets, pot Mums, Begonias, Azaleas, Geraniums, Primulas, etc. Spring plants such as fancy Petunias, Lantana, Coleus, Ageratum, annual Phlox, etc.

Send for Free Samples

*ALUMIPOT PRICES

Available in Plain Silver or Colors: Red, Green and Gold. (One color only packaged in a case.)

Quantities	2¼-in. Round Plain Per 1000	2¼-in. Round Colored Per 1000	3-in. Round Plain Per 1000	3-in. Round Colored Per 1000
2,000 to 8,000	$22.90	$25.50	$31.00	$37.25
10,000 to 24,000	21.35	23.80	28.90	34.80
26,000 to 48,000	19.85	22.10	26.85	32.30
50,000 up	18.30	20.40	24.80	29.85

Packed per case (Minimum order) 2000

Weight per case (Min. order) 2¼", 25 lbs.; 3", 37½ lbs.

4" Standard and 4" Fern pots also available.

PRICES NET, F.O.B. WEST CHICAGO, ILL.

*TRADEMARK, Reynolds Metals Company.

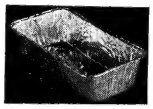
*ALUMIPAKS

A sparkling, eye-catching container for growing and selling bedding plants. Strong and durable. Plain silver color.

No. 804—4¼x8¼x 2 in. deep. 1000 per case (34 lbs.)
No. 711—5½x7½x2⅜ in. deep. 1000 per case (50 lbs.)

Min. order 1000. F.O.B. West Chicago.

*TRADEMARK, Reynolds Metals Company.

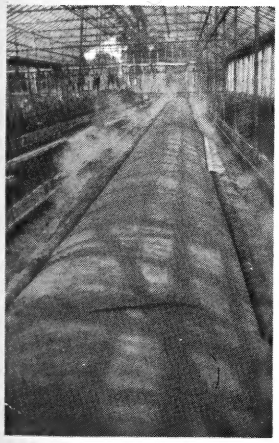


No. 804

PRICES

Quantity	Price Per 1000 No. 804	Price Per 1000 No. 711
1,000 to 4,000	$46.00	$52.00
5,000 to 9,000	46.00	48.00
10,000 to 24,000	42.90	47.00
25,000 to 49,000	39.85	46.00
50,000 up	36.80	45.00

SEND FOR FREE SAMPLES



PLASTIC FUMICOVERS

For Steam Sterilizing

Black or clear 3 gauge Vinyl

3 gauge vinyl plastic is light weight, tough, and pliable. Temperature range 10° to 280°F. The most widely used sheeting in the agricultural industry because of its durability, weight, and cost. Net, F.O.B. Chicago, Ill.

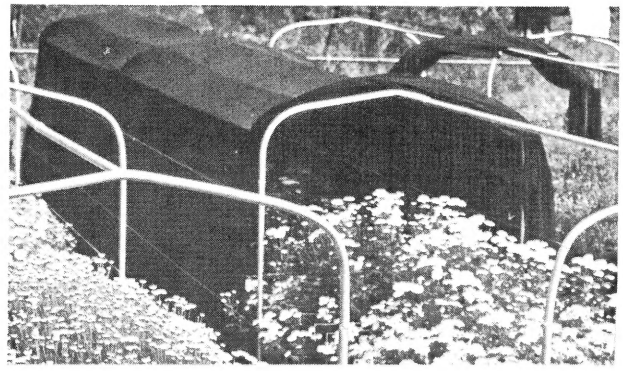
Width	100 ft. Length	150 ft. Length
6½ ft.	$20.80	$31.20
8 ft.	25.60	38.40
10 ft.	32.00	48.00
12 ft.	38.40	57.60

Chlorophyll Green 8 Gauge Vinyl (A heavier grade)

Chlorophyll green sheeting is made only of extra heavy duty 8 gauge vinyl plastic. Temperature range 10°F. to 280°F. Chlorophyll green light transmission is less than 1%. Life expectancy of 8 gauge vinyl is 3 times that of 3 gauge vinyl and 5 times that of 4 gauge polyethylene. Net, F.O.B. Chicago, Ill.

Width	100 ft. Length	150 ft. Length
6½ ft.	$38.35	$57.55
8 ft.	47.20	70.80
10 ft.	$59.45	$89.20
12 ft.	69.60	104.40

SHADE CLOTH



BLACK CLOTH (For Day Length Control on Mums, etc.)	Price per Sq. Yard Sewed	Price per Sq. Yard Unsewed
American Black Sheen	$0.65	$0.59
Knights Black Sheen. Heavier and more opaque; best for off-season	.71½	.65½

On orders for less than minimum of 100 Sq. Yds. sewed or 300 Sq. Yds. unsewed, a charge of $2.00 is added.

Sold in 3 ft. widths or multiples of 3 ft. only.

F.O.B. the Mills.

Ball Exclusives for POT ROSE FORCERS!

THUNDERBIRD (PAF)

SKYLARK (PAF)

Here are the Two Newest Sports in the Garnette Family!

Same excellent Garnette forcing characteristics and attractive bronzy-green foliage. Beautifully shaped flowers and high pointed buds. More flowers and larger clusters make them improvements for Easter and Mothers' Day pot forcing.

Thunderbird (PAF). Brilliant, velvety scarlet sport of Garnette.

Skylark (PAF). Beautiful clear pink sport of Carol Amling.

PRICES ON ABOVE TWO VARIETIES:

XXX grade: 10 plants, **$1.00** each; 20-90 plants, **87½c** each; 100-250 plants, **80c** each; more than 250 plants, **75c** each.

XX grade: 10 plants, **80c** each; 20-90 plants, **70c** each; 100-250 plants, **64c** each; more than 250 plants, **60c** each.

Minimum order, 10 plants per variety and size; please order in multiples of 10. F.O.B. West Chicago. Delivery December through February.

Geo. J. Ball INC.

WEST CHICAGO, ILLINOIS

phone West Chicago 299